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ABSTRACT

The premise of this paper is that vocational and nonvocational education can be reconstructed in a way that uses both in fashioning a new set of courses. This new curriculum should be able to bridge the differences perceived in the relations between academic and vocational cultures. The paper focuses most on educational history, from Aristotle and Plato to modern revisionists and neo-Marxists. From that history, which shows increasing disdain for "manual" arts in secondary schools and increasing requirements for "academic" subjects, a more classic definition of "education" that can take in all these views is derived. A case is made for a fused curriculum and educational collaboration that results in a new kind of "general" education needed by students in all fields. One hundred forty references are listed. (KC)

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VOCATIONAL PREPARATION AND GENERAL EDUCATION

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TABLE OF CONTENTS

Introduction 1

A Matter of Ideology 8

Relevant History 10

- The Platonic View 10
- Vocational Education as Charity 11
- The American Scene: The Workingman's School and Manual Training 15
- Poisoning the Well 17
- Herbert Spencer 21

A Matter of Definition 34

General Education and the High School 43

- Some Attempts at Restructuring General Education in the High School 48

General Education and Meritocracy 53

Is Curricular Fusion Possible? 59

- The Status Quo 59

General Education Again 70

References 73

INTRODUCTION

Vocational Preparation and General Education is the second of three papers having to do with the collaboration of teaching in the academic as well as the vocational fields. Our hope, in this as in each of the essays in this series, is that general education of high school students stands to gain by this collaboration. Our third essay, *General Education: Academic and Vocational Collaboration*, will parade a series of examples of topics where collaborative teaching might be undertaken.

Vocational Preparation and General Education follows *Polytechnical Education: A Step*. Indeed, Soviet educators and their colleagues in such countries as East Germany, Hungary, Poland, and Romania have tried to bridge the gap between the vocational and academic. Although our suggestion of collaboration does not follow in the path of polytechnical education, American educators should recognize that the problem we face is international. The socialist countries of Central Europe have been pioneers in taking practical steps towards making this collaboration work.

In this country we have faced another obstacle—that of attaining equality of educational opportunity. The ogre of inequality probably has not been banished, but the menace has been added to and overshadowed by another. Goodlad (1984) types it as access to knowledge. As he puts the challenge,

> The case for equal educational opportunity has revolved almost exclusively around the question of access to a school to be commonly attended and around discrimination based on color, race, or creed, but other considerations are now likely to expand the dimensions of controversy. Increasingly, the issue will be whether students, as a consequence of the schools they happen to attend and the classes to which they are assigned, have equality of access to knowledge. (p. 131)

Goodlad came to this conclusion when his research into school offerings showed that there was a great deal of "variability in curricular emphases." Any number of pressures distract administrators who have a great deal to do with curricular offerings:

> The lives of school administrators . . . throughout the professional career of many, have been crisis-prone and crisis-driven—desegregation, collective bargaining, declining enrollments, deficit budgets, rapid turnover in school board memberships, and so on. Curricular materials, however significant, are rarely of crisis proportions. For over a decade, they have taken second or third place to other things. (p. 137)

We must have these assorted dangers in mind while concentrating on what holds apart the two educational cultures. In addition, Goodlad (1984) draws attention to the variability in the teaching resources allocated the academic and the vocational and the interschool variability in academic subjects and in vocational ones. The latter are subject to greater variability, which we take to be a sign of the greater prestige of the academic. While there is interschool variability in academic subjects,

> it is vocational education that catches our attention. Over 42% of the teachers at Fairfield were in this field—just slightly less than the total for English, mathematics, science, and social studies. The 41% of vocational education teachers at Euclid is equal to the total of English, mathematics, science, social studies, and foreign language teachers. But at Newport, teachers in these five fields totaled 62% of the teaching staff, with only 13% in vocational education. Palisades, also with 13% of the teaching force in vocational education, totaled 66% for the five academic subjects. (pp. 137-138)

Goodlad's estimate is the basis for our reflection on the division of the educational culture, a gulf that has been so costly to the general education of students. The next few pages will look behind the thinly veiled animus, searching for an explanation in terminology or in the historical record. Our objective is not to find a list of provocations for the gulf, but, rather, to argue that it is an unnecessary obstacle to achieving a general education. The essence of the case is that both the academic and the vocational can make use of each other. We have chosen to allow the vocational to furnish the subject matter and to say that the exploration of this subject matter can be all the more powerful if the academic teachers are involved in collaboration with their vocational colleagues. The same result would have been achieved had the first steps, the illustrative topics, come from academic subjects. The source really is immaterial. What matters is that there be collaboration, that neither the academic nor the vocational teacher look down on the subject matter of his colleague on the other side of the educational aisle. Woodring (1979) puts it well:

> A well-taught high school course in agriculture can contribute notably to the student's understanding of botany and zoology, hence has liberal value. Much depends on the teacher, his wisdom, breadth of understanding, and the goals he sets for himself and his students. If a vocational teacher understands and values the goals of liberal education, he can contribute notably to their achievement. If he is scornful of such goals, he will contribute nothing to them and may cause his students to share his scorn. (p. 645)

Admittedly, this increases the responsibility of the vocational staff, but their fields are as a mine that has not been exploited. One is reminded of Russell Conwell's talk that was so very popular in the Horatio Alger era. Its title was "Acres of Diamonds in Your Own Backyard: Or How Men and Women May Become Rich." Our ambition is not to help high school students become rich, but, rather, to help them make use of the material that is in their vocational subjects—subject matter that has been neglected and now is waiting to be explored to the enrichment of the student's general education. We think that teachers in any of the academic fields can help, can collaborate to the gain of their academic subjects as well as to the gain of the vocational subjects.

It is a fair question to ask in what essential way collaboration differs from a balance in the curriculum between academic and vocational subjects. Even as generous a balance as Goodlad's (1984), one that allows vocational study a large share of teacher effort because vocational study is perceived as sharing in general education, is not what we are after. We have a different goal, a different model of general education. This model will be fleshed out in the essay, *General Education: Vocational and Academic Collaboration*, the last of the three essays that elaborate our point of view. At the moment, we are preoccupied with pinpointing some of the reasons for the division between the two educational cultures.

Returning to the notion of determining who stands to benefit from the collaboration, the general education of students comes first, but it is closely followed by an increase in the interesting substance to be studied and taken up in class. Both points are paramount. The first implies that we do feel strongly that general education (sometimes written of as liberal education—a distinction to be taken up later) is most important. A defense of general education is not new; it has been voiced again and again. We become involved when thoughtful educators such as Woodring (1979) feel that vocational education is shouldering aside what he holds essential in a general (or liberal) education (pp. 644-646). Unhappily, the sense of a division in the academic and vocational cultures haunts the educational world. We would try to exorcise that malignant spirit. As long as the division remains, it will keep too many vocational courses from offering more than skill training while depriving too many academic courses of a fine source of material that could lead to an enhanced and *interesting* general education. A benign spirit can be sensed when Conant writes of high school electives in a passage quoted by Goodlad (1984) with Conant's approval:

> Here would be the chance for vocational and business courses, for work in the arts, for agriculture and home economics and a thousand other practical fields. As said many times, even these courses are not wholly vocational in intent, nor is the break complete between them and general education. On the contrary, they should carry forward the spirit of it into these realms and for these [not the college-bound] young people, exactly as does further mathematics or language for those who are going to college. (p. 139)

Conant has moved in the direction we wish to go with collaboration. True, *General Education in a Free Society* (Harvard University, 1945) is but a step. Yet, as with polytechnical education, a step in what we think is the right direction is welcome.

We emphasized the word "interesting" in writing of a student's general education. What we had in mind is that a general education is likely to be more interesting when students feel that it is related to the world around them. But someone, Conant (1967) for example, who does not wish to denigrate vocational study, can see merit in it aside from the skills mastered. Conant, in arguing for a comprehensive high school, moved even further than he had in his *General Education in a Free Society*. Although his ends are more social than educational in urging that a high school include both academic and vocational courses, Conant writes an intriguing passage:

> To my mind, it is desirable for as many boys and girls in high school as possible to have an ultimate vocational goal. It may well be that many of them will change their minds before the high school course is over or in later years. But if a student thinks that what he or she is studying in school is likely to have significance in later life, the study in question takes on a new importance. There is less tendency for such "committed" students to waste their time or have a negative attitude towards their schoolwork. (pp. 62-63)

The next step would be to combine this appreciation for the positive attitude of so many students in vocational courses with the breadth of understanding that can be encouraged by teachers of academic subjects when they collaborate with the teachers of the vocational courses.

To parody Alfred North Whitehead on education, let a general education not be "inert," boring, and irrelevant. This will intrigue teachers bedeviled by lack of student interest, teachers whose students can be caught up in inquiries into what have been, or are, the real challenges of problems and opportunities that are alive, or have lived, in the real world.

There is one additional gain. If the collaboration succeeds often enough, vocational courses will lose some of their reputation of being schoolwork for those of meagre academic gifts, poor in manipulation of abstractions and generalizations, and probably more in need of marketable skills than a general education. Goodlad (1984) may reject the stereotype that there are two types of people—those who prefer to work with their hands and those who work with their heads—but he probably is in the minority: "Those children who appear to relate most readily to the manual mode and least readily to linguistic and numerical symbols often are those judged as poor and slow learners" (pp. 142-143). We think that collaboration will undermine this stereotypical thinking, but myths die hard. Rhetoric and good wishes are poor weapons with which to defend the honor of those who elect vocational courses. We believe that what is advocated in this and the essay following will help disprove the myths.

There are prerequisites. One is that more than social studies should be called on. Most of our examples, both in this essay and in the one that follows, will involve teachers of social studies, but the areas of potential collaboration are more extensive. The more troubling need is organizational. A proposal that favors teachers councils will be put on the table as useful instruments to advance collaboration. This is not a notion that can be readily pushed aside. As we deal with collaboration, we see that the latter requires an infrastructure. Without organization, collaboration has the appearance of organizational anarchy, a team arrangement that is fortuitous, an arrangement between friends teaching in the same building. In contrast with that anarchy, collaboration requires planning; time has to be made for it. That idea is no more than a challenge to those at home in organizational theory and practice. The thought of collaboration should not founder for lack of a sound administrative and organizational infrastructure.

We are not alone in our search for a melding of vocational and academic education through collaboration. When one reads *The Unfinished Agenda* (National Commission on Secondary Vocational Education, 1986) or "The Unfinished Agenda Revisited" (Silberman, 1988), both written under the auspices of the National Center for Research in Vocational Education, the call for attention to a new appreciation of vocational preparation is emphatically driven home. And the perception of vocational preparation sits at the head of the unfinished agenda. One brief paragraph from *The Unfinished Agenda* carries the bitter message:

> The perception is that vocational education typically prepares youth, especially males, for blue-collar, "hand" occupations. Because most middle-class parents devalue any high school program that is not a prerequisite for admission to four-year colleges or universities, they devalue vocational education. Consequently, school officials often view and use some vocational programs as a "dumping ground" for less able students. (National Commission, 1986, p. 8)

This attitude is described in *The Unfinished Agenda* as the product of an "educational myopia," that sires such a dim conclusion as is captured in the scornful reminder that "High school vocational education is downgraded and assigned second-class status, especially trade and industrial programs. Some of the most successful vocational programs, such as clerical and computer studies, are reluctantly listed as such" (p. 2). This is the matrix which has as one recommendation that "schools should not provide separate tracks that lead to distinct diplomas" (p. 25). The Soviets are not handicapped by the inferior status given workers. At least lip service is paid to the nobility of work. Silberman (1988) draws the contrast by stating that Americans are challenged

> to raise the status of ordinary workers in our society, and with it the status of their preparation. The vigorous marketing and promotional efforts required of vocational educators implicitly demonstrate that vocational programs are often accorded the same low status as the occupations for which they are preparing workers. (p. 40)

Most recent is the ideology of those who chronicle educational history as "revisionists" and neo-Marxists.[1] Not all revisionists can be classified as neo-Marxists and the American neo-Marxists are not preoccupied with the thoughts that guide the Soviet and other socialist Marxists. The latter find in Marx, Engels, and Leninist followers reasons to think that productive work has a place in the secondary school curriculum. Marxist thought in interpreting the American educational past has understood vocational education as a tool of big business control—a monopoly of political power, wealth, and social status. While some neo-Marxists have given their major attention to an economic interpretation, most have offered analysis in terms of conflict between social classes, classes that are characterized by their access to wealth, power, and status.

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[1] There is a large body of neo-Marxist literature, but only one or two titles suffice to illustrate their viewpoint. Although a decade apart in their dates of publication, the ideology is unchanged in Bowles and Gintis (1976) and Bowles and Gintis (1986). The classic revisionist study was published by Katz (1975), though more recent writing is provided by Apple (1982a, 1982b). The journal literature is salted with articles by revisionists to whom Ravitch (1978) responded. An adequate summary of the revisionist and neo-Marxist critiques can be found in Kantor and Tyack (1982).

Revisionists have shared those views, differing from the neo-Marxists largely in terms of their targets which, in the main, have been an analysis of the history of American education. In this analysis, those who have been portrayed as reformers extending educational opportunity have been reinterpreted as agents of conforming, business-like efficiency.[2]

While no longer as prominent in their contributions to the history of American education as they were in the 1970s,[3] the revisionists have added to the doubts about vocational education their warning that, since the turn of the century, American vocational education has been used by "big business" to control workers by teaching them to be productive, obedient, punctual, and uncritical. Revisionist writing always has questioned the motives of those who advocated what passed for vocational preparation. The neo-Marxists have agreed and added emphasis to the insistence that equality of opportunity and income will not be reached by means of educational reconstruction, but only by the reforming of society so as to rid it of social classes and privilege (e.g., see Grubb & Lazerson, 1982; Hogan, 1982). The implication for this study is clear; from either a neo-Marxist or revisionist standpoint, the curricular reconstruction we are studying will not affect the unequal distribution of wealth and power, nor the menace of discrimination and exploitation (Jencks et al., 1972). These are questions of ideology, but ones that affect the interpretation of how vocational education has developed in the United States. While they cannot be treated in anything but a cavalier fashion in this paper, the revisionist and neo-Marxist theses are to be taken seriously; they are the most lively of the ideologically based interpretations available to us.

Definitions of two pivotal words, training and education, can and will be disposed of. The point is not to exercise lexical dexterity, but, rather, to exorcise a verbal goblin that has plagued the relations of academic and vocational education.

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[2] The original study on this theme was by Callahan (1962), with a significant analysis of the Callahan thesis to be found in Berman (1983). One of the earliest publications of the revisionist genre was by Cremin (1965).

[3] The change in orientation is evident in Hogan (1985). Hogan writes that, while his interpretation of Progressive reform in Chicago, 1880-1930, "is very much in the revisionist tradition . . . it eschews the social control perspective that has dominated revisionist educational history." Hogan emphasizes what he calls "structuration" and class formation. In his *Learning to Earn: School, Work, and Vocational Reform in California, 1880-1930*, Kantor (1988) joins in acknowledging an indebtedness to revisionism, but also a backing away from its doctrine of social control. This pulling back from a revisionist stand is spelled out in Katznelson and Weir (1985).

Reflection on definitions will take this analysis to the confusion that has grown around the idea and ideal of a general and much older notion of a liberal education. While our agenda has all too little place for the history of general and liberal education, or of such condemnations of bookishness as Rousseau's, or the opinions of Plato and Aristotle which touch on the aims of education, at least mention of the historical record is in order. But more than mention is to be made of the promise of general education and of the quality sought by a liberal education. That is simply because the principal thesis of this report is that vocational and non-vocational education can be reconstructed in a way that uses both in fashioning a new set of offerings. This new curriculum should be able to dim the glaring differences perceived in the inimical relations between academic and vocational cultures.

A MATTER OF IDEOLOGY

Neo-Marxism and revisionism can be seen as closely tied (a review of central objectives in neo-Marxist and complementary reform ideology can be found in Shapiro, 1988). Although the *civisme* of Butts (1980), referred to in our reflections on Soviet polytechnical education, is an alternative ideology, the revisionist/neo-Marxist coalition has been much more influential. This viewpoint represents a joining of the radical left in political, economic, social, and educational philosophy. Politically, the alliance sees the worker as alienated from his work and made to feel impotent in his/her "real" subordination. The subordination was discussed by Marx, and Hogan (1985) cites approvingly Marx's perception that the "formal" subordination of workers to masters had given way to "real" subordination "in order to differentiate between the development of capitalist property relationships (the wage labor system) and the creation of a specifically capitalist labor process in which the organization and control of the labor process was under the aegis of capital rather than labor " (p. 143).

The economic dimension of the coalition shades into the social. The workers are "blue-collar" for the most part and are relegated to an underclass with little attention being paid to technical (including office employees) and professional workers.[4] The picture painted is one of conflict between classes (Hogan, 1985).

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[4] This neglect of the white-collar worker is not only by the Marxists. Kantor (1988) remarks on the oversight by vocational educators of office and professional workers. Kantor thinks of this neglect in the

Putting aside the class conflict theorizing of so much neo-Marxist writing, the essence of the revisionist stand is sketched by a debate Kantor (1988) sees dominating educational reform in this century. The contrast is helpful and is quoted at length:

> On the one side of this debate are those who link educational reform to the expansion of American democracy. These scholars argue that the vocational movement sought to liberate the school from outmoded practices and to expand occupational opportunities for immigrant and working class youth. Only by adding practical, job-oriented courses, they say, could the schools meet the diverse needs of an expanding clientele without sacrificing public education's commitment to equal opportunity for all members of American society. The outcome, they conclude, was a more responsive and relevant school system where fewer students dropped out from boredom and frustration and where students acquired the occupational skills that led to higher wages and better jobs. (p. xi)

On the other side of this controversy are a diverse group of scholars—generally revisionists—who view education as a form of social control. Rejecting outright the idea that educational reform was a product of American democracy, they argue that vocational education was shaded by businessmen and that professional education was interested not in democratizing education, but in using the schools to control workers and stabilize the corporate-industrial system that was emerging in the early twentieth century. The result, in their view, was a class-stratified school system that socialized youth for their new economic roles and guided them neatly into their appropriate niches in the expanding social division of labor (Kantor, 1988, pp. xi-xii).

The question that immediately confronts us is whether the revisionist and neo-Marxist understanding has abetted the dualism that shadows the chance of useful interaction between academic and vocational education. The response is that it does not. By denigrating vocational education as primarily a means of social control, the reason for the existence of vocational preparation, however modified, is in doubt.

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early decades of this century as chiefly a function of "the vocational movement's preoccupation with changes in industrial labor [e.g., specialization, deskilling and routinization] and the conflict those changes produced" (p. xiii). He adds that "it was also rooted in the movement's attitude toward girls. Troubled that girls outnumbered boys in high school and worried that rising rates of female participation in the labor force threatened women's traditional roles as wives, mothers, and housekeepers, much of the vocational movement in education was designed to hold more boys in school and to preserve traditional notions of a 'woman's sphere.'" Kantor's argument does not lead to the conclusion that public education in the United States has not had vocational preparation as one of its objectives. One of his earliest remarks in regards to the conclusion of *Learning to Earn* is that "[the book] seeks ultimately to illuminate how the rise of vocational education made preparation for work one of the primary aims of American education" (p. xi).

RELEVANT HISTORY

The Platonic View

Vocational education's historical record of what well may have been true and, on the other hand, what probably is myth, can only be sparingly sampled. For the most part, it is an American history into which this section of the inquiry will dip. Even so, we cannot be strictly held to the American educational history.[5] No historian will differ with insistence that the chronicle of American views on education has been markedly touched, not only by European thought reaching back to the Middle Ages, but by Greek and Roman speculation as well. It is a commonplace that Plato (1969) relegated manual labor to the bottom of the social pyramid he drafted for his ideal state. Since the Platonic state was the analogue of the human body, the manual laborer was as the hand. And those who ruled the state found their counterpart in the mind (p. 428).[6] Those who were to rule were philosophers, people at home in generalization, theorizing, thinking, and, of course, framing laws in accordance with justice. But none of this should be interpreted as meaning that Plato looked down on skilled labor (Beck, 1981). Not at all. Plato invariably depicted the artisan, who knew his craft, as a model betrayed by such imitators as the rhetoricians and pretentious sophists. (This is demonstrably the case as is illustrated by such dialogues as the *Gorgias*, *Theaetetus*, and *Sophist*.) It is true that Plato esteemed the philosopher-king, but it is highly doubtful, given his disdain of the sophists, that he would have been an ally of those whose ideal of a general and liberal education has little place for thought about, or preparation for, the world of work. Stone (1988) misleads his readers by leaving the impression that Socrates or the Platonic Socrates sneered at workers. The Socratic intention was to fix attention on governing, and for governance the Socratic opinion was that kings must be philosophers and philosophers, kings.

And what has so briefly been said holds true for Aristotle (1928), who enjoyed as much influence on European and American educational theory as did Plato. It is true that Aristotle felt that thought—especially thought given to speculation on causes, thought that

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[5] Those interested in historical interpretations will wish to consult such authors as Bennett (1926, 1937), Barlow (1967), and Kantor and Tyack (1982), together with studies that concentrate on a single state (Stakenas, Mock, & Eaddy, 1984), for a defined period of time [e.g., Kantor, 1988], or even a city [e.g., Hogan, 1985); histories of a movement such as Bolino, 1973; or histories of one of the subfields of vocational education [e.g., McClure, Chrisman, & Mock, 1985].

[6] The bodily equivalent often is said to be the head, but the Greeks did not think of the head as the corporeal host of thought (see Onians, 1951).

then evolved into wisdom (*Ethics*, 1139b 14-1141b 8; *Metaphysics*, 982a-b)—was what the most adequately educated person possessed and esteemed. Wisdom was to be pursued for its own sake (*Metaphysics*, 982a 30) and could be considered a science "which knows to what end each thing must be done" (*Metaphysics*, 982b 4-5). There is no question that Aristotle felt such wisdom superior to any "productive science" (*Metaphysics*, 982b 11-12), but, as with Plato, that did not lead him to propose that the learning and plying of skill in craft (or profession) was unimportant. The pursuit of profit or power was something in which neither Plato or Aristotle were interested. But that is not germane. It was the analytic, probing search for causal explanations that lured these philosophers. That intellectual pursuit was forgotten by those who saw their search for truth as demanding that the mind, or the intellectual exercise of abstraction and generalization, in the search for the true, the good, and the beautiful—as well as for natural and civil law—place all forms of vocational preparation well below the salt. No more did a Christian overlay of Plato and Aristotle intend a disdain of vocational preparation, which, of course, was managed by apprenticeship and had no need of schooling. Apprenticeship monopolized vocational preparation for centuries. Professional study in theology, medicine, and law were exceptions, but even "reading law" and apprenticing to a practicing lawyer was established practice in this country until very late in the nineteenth century.

Vocational Education as Charity

One has to recognize that a good deal of vocational education was undertaken and supported as charity. The social-class character of this caring became a stigma. There is no denying that fact. We shall argue that among the challenges facing the nation today is the vocational preparation of young men and women who cannot enter the labor market with a chance of success without that preparation. How long has this charitable quality of the most simple form of vocational preparation lasted? There is no exact trace of efforts, but surely one of the earliest modern trials developed out of German pietism and the schooling of orphans, as well as the children of wretchedly poor parents:

> Here the outstanding figure is August Hermann Francke (1663-1727). Francke's fame spread through much of Western Europe but it is one of the unfortunate tricks of history that what was undertaken with the best of motives had an unhappy consequence. Education for independence because

of having a marketable skill became saddled with the reputation of being charitable and its beneficiaries socially lowly.[7]

Thus it was that Baron von Rochow, whose wealth came from farming and who was dismayed by the lot of the rural poor, in 1772 published his *School Book for Children of Country People and for the Use of Village Schools*. Other squires were in no hurry to join with von Rochow but his interest did not flag and slowly von Rochow won adherents to the charitable message of his first book, repeated in *Schools for the Poor: Abolition of Public Beggary*.[8]

Francke and von Rochow might have promulgated their charitable doctrines in vain had it not been for a Swiss who always felt failure in his lifetime but whose ideas worked magic in Europe and were imported into the United States by more than one observer, whose reports were glowing endorsements of the educational philosophy of Johann Heinrich Pestalozzi (1746-1827).

For 30 years Pestalozzi farmed at Neuhof only to lose everything but his homestead, which he promptly converted into an orphanage. In the orphanage lonely or abandoned waifs learned gardening, cotton spinning and housework, all in combination with reading and writing. The orphanage failed, as did a later attempt at Stanz. Yet, while failure plagued the Swiss reformer's practical experiments, his novel, *Leonard and Gertrude* (1782), triumphed. Readers wept over the sentimental portrait of the good and patient Gertrude both teaching the three R's and having her children and the neighbors learn a trade by practicing housework chores, gardening, tending domestic animals and even farming in a very modest way.

Pestalozzi was furious that the novel was highly popular but the educational views neglected. He knew his readers had missed the point. Pestalozzi felt that children had to grow into having self-respect, a sense of being able to make their way in the world. He knew that if Swiss village life was to become less mean, to see less poverty and drunkenness, children had to develop character that could only come with having skills of domestic and other crafts. He knew that general education had to be changed to include what came to be thought of as vocational training. (Beck, 1981, pp. 10-11)

The European history of vocational education has a full record of the activity of Pestalozzi or of the better endowed workshops supported by Philip Emanuel von

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[7] A similar act of charity was underwritten in Sweden in 1868 when August Abrahamson financed a school for peasant children whom he hoped would learn a trade (Beck, 1988). These charitable undertakings, just as Robert Owens' in England, an activity that influenced the thinking of Marx, are examples of what cannot be discounted by revisionist analysis.

[8] Tolstoy, well-known author of such Russian classics as *Anna Karenina* and *War and Peace*, was a Russian aristocrat and landowner as well. He was also profoundly concerned with the education of peasant children. In the late 1840s, he opened his first, somewhat experimental, school for the serf children on his estate—Yasnaya Polyana. This school survived only a few years. His second and vastly more successful village school was opened on his estate late in 1859 (Tolstoy, 1967; Pinch & Armstrong, 1982).

Fellenberg (1771-1884). Each of these trials kept alive the concept of learning-by-doing-and-earning exactly as it had been in the familial arrangements common to apprenticeships where masters often had the sons of fellow masters as apprentices. But what often has been overlooked is that what was charity for children of the lowest social class was a fine new form of education for patrician youngsters:

> Not long before Pestalozzi was to feel his first failure and suffer from the misunderstanding that postponed his fame for so many years, Johann Bernhard Basedow (1724-1790) was being hailed. His *Appeal to the Friends of Mankind and to Men of Power Concerning School and Studies and Their Influence on Public Welfare* (1768) resulted in money coming to Basedow from all over Europe—money with which to buy time for writing textbooks that he promised would represent a new education. The new education was to blend the three R's with training of hand and senses. Four volumes appeared and Basedow opened his Philanthropinum in 1774. (Beck, 1981, p. 12)

Unlike Pestalozzi's orphanage schools, the Philanthropinum did not fail. The essential difference between what Basedow promised and what Pestalozzi and other charitable people hoped to support was that Basedow thought of training the senses and the hand as integral with a powerful general education rather than as looking forward to acquiring skills to be used in making a living. It is common knowledge that this idea, later to be fruitful in the American manual training movement, was to have an exponent who was a contemporary of Basedow, but far better known than Basedow—and far more unorthodox. Jean Jacques Rousseau (1712-1778) published his famous *Emile* in 1762 and generations of its readers were to be influenced by the thought that was expressed by a single sentence of that book. "I hate books," Rousseau wrote, "they merely teach us to talk of what we do not know." So upsetting were the seemingly anti-intellectual ideas espoused by Rousseau that at one point the author had to leave France to avoid arrest. Rousseau seemed anti-intellectual when, as Socrates, he was only outspoken in his mistrust of pretentious claims of so many self-styled experts on education.

Rousseau vigorously expressed the belief "that experience was the best teacher" and that "true education consists less in precept than in practice." Manual work was necessary, not as an end in itself, but for the development of intelligence: "If instead of making a child stick to his books I employ him in a workshop, *his hands work for the development of his mind*" (Beck, 1981, p. 15, author's italics). It is this decision to use manual training to train the mind that distinguishes Rousseau's preference for carpentry—or another exercise

of shop or field—from the vocational preparation sought by Pestalozzi, von Rochow, von Fellenberg, Robert Owen, and their counterparts. It was the Pestalozzean thrust that has been disowned as *dèclassè*. Unfortunately, this rejection took root in the United States.

The controversy in the United States between those who saw manual training as part of a liberal education and those who wished for a strictly vocational preparation had its roots in the thinking of the Finnish Uno Cygnaeus, and are contained in his *Strödda Tankar* (Stray Thoughts on the Intended Primary School in Finland), a brief document prepared in 1856 or 1857:

> One sentence of Cygnaeus' proposal, one that might have been included in a presentation to the Finnish parliament (*Senaatti*), makes the point. "It [hand work] must . . . retain its pedagogical aim continually, i.e., the development of the eye, of the sense of form, and the provision of a general manual dexterity, and not of some particularized and insisted skill." (Beck, 1988, p. 20; also see Bennett, 1926, p. 58)[9]

In Cygnaeus' eyes, manual training was to be part of a general education for all Finnish youngsters:

> A far different purpose commanded the work in Nääs, Sweden, where Otto Salomon guided an industrial school (*Arbets Skola*) for boys who had completed the folk school (Bennett, 1937, p. 42). This was in 1872, some four years after Salomon's uncle, August Abrahamson, a retired merchant, financed a school for peasant children whom he hoped would learn a trade. The schools of Abrahamson and Salomon were vocational schools where teachers were "intelligent artisans" who became qualified by one year of preparation in a normal school. (Beck, 1988, p. 20)

It would be out of place to comment on developments in manual training, conceived of as part of a liberal education, or, in contrast, industrial (vocational) preparation in such other European countries as France, Germany, or England. It is enough to recall that the Paris Exposition of 1878 helped stimulate a discussion of what the schools could do to make French industry more competitive with the manufacture exhibited by other countries.[10] This very soon moved to a discussion of whether manual training was to be an integral part of the French public school or administered and financed separately—

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[9]Cygnaeus' proposals may have been offered in an oral presentation to those with governing responsibilities. At any rate, the recommendations of Cygnaeus were accepted and he left Finland for a visit that included portions of Germany and the Netherlands. In 1861, back in Finland, Cygnaeus elaborated his earlier suggestions.

a debate that would find its counterpart in Chicago some years later (Bennett, 1926, pp. 120-121). It would be possible to document reflection in Germany, except that there seemed to be more talk and writing in Germany on the propriety of supplying skilled workers for manufacture and industry, as well as insuring the vocational future of poor children, or, on the other hand, enlarging liberal education by adding a manual component. England, too, offers illustrations, but enough has been said to highlight the emphasis.

The American Scene: The Workingman's School and Manual Training

In writing of the Workingman's School there is no intention of forgetting that a Mechanics Institute Movement had been in existence for some fifty years by 1870 or that the beginning of manual training is properly associated with the name and work of Calvin Woodward, Dean of the Polytechnical faculty of Washington University, St. Louis, Missouri. And, yet, the more complete story must include the vocational readiness of the urban poor, whatever that was to mean, as well as the training of hand and mind that was the characteristic claim for manual training (Beck, 1988, p. 22).

It is well to recall that this last—the belief that training the hand also trained the mind and that manual training belonged in liberal education—was reviled as the claim of the "culturists." This last was the sneering judgment of those who championed the belief that *genuine* vocational preparation had to be taught by skilled craftsmen and had to have specific jobs as goals. The last of this assertion has "gone by the board," but we continue to live with the competition between those who wish vocational preparation and those who disdain it. In short, we are not writing of ideas no longer relevant.

There was a school, an important school, whose director, Felix Adler, wished to have it both ways. His school, opened in 1878, was advertised in the slums of New York City as The Workingman's School and Free Kindergarten:

> There were to be no fees. Adler wanted to serve the children of the city's desperately poor. And there were many. Five years earlier the United States suffered a cruel depression. Marxism and communism had made some headway. The economist, Richard T. Ely, estimated that the National Labor Union enrolled six hundred and forty thousand members and was

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[10] This point was elaborated in the Carbon Commission report of 1879 (Bennett, 1926, p. 147).

> able to send a delegate to the radical International Workers' Alliance meeting in Basel. (Ely, 1885, p. 25)[11]

In 1878, Adler and a friend announced the opening of a "free kindergarten." Adler was troubled by the depression of 1873. As President of the Ethical Culture Society, he wished to "help the poor to help themselves. Education . . . is the only accepted means of doing this" (*The Workingman's School*, p. 4). "Hand education" was Adler's panacea for the ills of the poor. Having talked of educating the poor, one immediately thinks of hand education in terms of trade school training. Adler meant no such thing:

> We do not propose to give our pupils an aptitude for any particular trade. . . . We would consider that a retrograde step rather than as a step in advance, if we were to prevent these young lads and little girls from spending even a few years in gaining knowledge, without reference to the pitiable necessities of their afterlives; we do not propose to yoke their young souls before they have had time to expand at all into the harness of trade, merely for the sake of earning their bread afterwards. ("A New Experiment in Education," pp. 113-114)[12]

What Adler intended for the children of the poor was that their education would be what every person's schooling should be—active:

> We lend . . . an entirely new import to the method of industrial education in the school. We are seeking to apply the principle which ought to be at the foundation of every modern scheme of education: namely, that, as experiment conjoined with observation is necessary to the discovery of truth, so object-creating must supplement object-teaching in that rediscovery of truths which it is the purpose of all education to facilitate. Therefore, work instruction is not something outside the regular instruction. It becomes a means of teaching mathematics, for instance, more thoroughly, causing the pupils to work out mathematical truths with their own hands. . . . It becomes the means of making the hand a wise and cunning hand by putting more brain into it. But, on the other hand, it also makes the brain a clear and vigorous and enlightened brain by giving it the salutary correction of the demonstrations of the hand. (*The Workingman's School*, p. 14)

The leading question that has haunted American vocational education had been asked. It was whether there would be a program of vocational training that was not part of a liberal education. No one should be deceived by the term "manual training." The role of

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[11] Ely wrote under the impression that the radicals were more numerous and more influential than they may have been. His figures on membership in the IWA, and in other radical organizations, must be taken with a measure of skepticism.

[12] See also Bennett, 1937, pp. 363-364, 416-419, and 456-459. A more comprehensive account of Adler's thought and experimentation can be found in Beck, 1942, pp. 16-51.

hand work and learning about tools and their use was a minor matter in the history of European and American schooling. The real question, the challenge, was whether this manual training was enough to prepare school-leavers for life. Confusing a straightforward response was the social-class implication that young people from impoverished families needed schooling that would help them to be economically independent in the future. This was not the question faced by Marx and Engels. As felt by Robert Owen and the "utopians" to whom Engels referred—or Pestalozzi and Otto Salomon for that matter—poor youth needed an education whose primary quality was vocational preparation. What Marx, Engels, Lenin, and their ideological successors did was to accept the vocational preparation as a necessary supplement to academic study. The transformation of this amalgam into modern polytechnical education was easy.

A very different path, or, more accurately, a set of two paths evolved in the United States. The idea of Adler and the manual training advocates came to be accepted for what it was—the addition of manual training to academic study; the updating of a tradition that dated at least to Rousseau's *Emile*. In short, manual training was understood to be irrelevant to arguments over vocational preparation. The real controversy pivoted on whether there should be an independent system of vocational preparation. The first and most robust struggle took place in Chicago (see Hogan, 1985); the philosophical equivalent was written out in an exchange between David Snedden and John Dewey (Wirth, 1972, 1974; Snedden, 1915; Dewey, 1915). Who won, who lost? It is certain that vocational education lost. Its status was diminished. Those who treasure liberal education speak and write of their treasure as academic and as preparation for living, surely not as preparation for making a living.

Poisoning the Well

The events and arguments to be mentioned deserve, and someday may get, more adequate discussion than is afforded here, and more impartial and measured analysis than is to be found in the literature. The latter is hobbled by interpretations weakened by social class bias (as seems to be the case with Hogan, 1985) or by a romantic charge that such men as Snedden and Prosser were victimized by the cult of efficiency (as with Wirth, 1972, 1974). We are writing of a time when professionals and laymen alike were victimized by suspicion that the objectives of others, others they fancied to be bitter

opponents, were objectionable. Historians of American education, of vocational education most of all, have been infected by this same doubt. All in all, the principal fault in otherwise substantial reporting is the assumption that motives were questionable—misguided at best, and, at worst, selfish. What is to be assumed by such a phrase as "adjuncts of the market economy," which ends a passage in Hogan's (1985) study, *Class and Reform*, where there is reference to Superintendent George Howard's observations in 1884 and again in 1887:

> Superintendent George Howard, noting the growth of the city [Chicago] and the decline of the family, argued that the school had to begin "to aid the individual in gaining a living" by teaching children "the art of self-guidance and self-help" and the habits of punctuality, order, system, *subordination*[13] [author's italics] and industry." In the half century that followed, a coalition of businessmen, Progressive reformers, and education officials succeeded in transforming the curriculum and, in part, the pedagogy and the organization of public schooling in Chicago into "adjuncts" of the market economy. (p. 139)

"Adjuncts of the market economy" has a pejorative cast. The phrase implies that the interests of young people were being subordinated to the "market economy," something to be suspected of manipulation by industrialists and big business. The fact that there was a degree of cooperation between businessmen, Progressive reformers, and educational officials, a fact that struck Hogan, might hint at a degree of altruism. Of course, businessmen of the time were worried about foreign competition. Ella Flagg Young and other reformers were anxious observers of poor families: the wretched lives of immigrants, ruined farmers, and others. Superintendent Howard did not look away; as did Felix Adler in New York, he thought that schooling was the last best hope for the impoverished. The real question was what was the most promising form of schooling?

But that question was buried by the bitter memories union leaders had of strikebreaking, lockouts, and terrible working conditions—all of which made them hostile to the educational reforms advocated by businessmen, whose Commercial Club of Chicago was the center of their advocacy of vocational preparation, even if that called for secondary schools under a management independent of that governing the academic public schools. Not a few who sided with the unions sensed that business advocacy of educational

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[13] Although the writer has not seen the word "subordination" fastened on, it would not be surprising were it displayed as evidence that the typical city superintendent was bent on turning out obedient workers and not independent, thinking people.

reforms, favoring a separate system of vocational schools, only masked a desire for pupils trained to be obedient, loyal, and efficient producers. The essential point was that

> The Chicago Federation of Labor . . . viewed the plan as an attempt on the part of large employers to turn the public schools into a supply depot for docile, well-trained workers. The Federation argued that the plan would establish a class system of education wherein the children of the workingman would be shunted into vocational schools and from there into factories. (Hogan, 1985, p. 177)

The opposition being expressed was aimed at the Cooley Bill, introduced into the Illinois legislature where it was soundly defeated. Certainly one of those responsible for the defeat was another school superintendent, the brilliant and forceful reformer, Ella Flagg Young. Her objection complemented that of the Federation; she was adamantly opposed to a system of vocational schools that was autonomous. Such a division, she was certain, would reenforce social-class division (pp. 176-177).

This sturdy phalanx, soon to be joined by the renowned American philosopher, John Dewey, was in arms against what was known as the Cooley Bill, named after Edwin Cooley, another of Chicago's former school superintendents. Cooley had retired in 1909 and the Commercial Club sponsored him for a twelve-month study tour of industrial education in Europe.[14] The members of Chicago's Commercial Club—and they had their counterparts in Boston and elsewhere—financed Cooley because they were worried about the ability of American business and industry to compete with their European counterparts. The literature does not make plain what persuaded them to think that hope lay in remaking general education or even in having a separate vocational school that would be an European style continuation school following the elementary grades. There is reason to believe that businessmen in New York, Boston, and Chicago were affected by the arguments of Herbert Spencer, to whom we shall turn directly. For the moment the focus is Chicago and the ill-fated Cooley Bill. Cooley's plan called for full-time vocational schools and part-time

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[14] Cooley's first stop was in Munich, where the director of schools, Kerschensteiner, had won attention on both sides of the Atlantic. Cooley persuaded Kerschensteiner to lecture in the United States. Through Cooley's intervention, the Commercial Club underwrote the translation and publication of one of the best known of Kerschensteiner's books, *Education for Citizenship*, published in 1911. In 1912, the Commercial Club also underwrote the publication of Cooley's *Some Continuation Schools of Europe* and, later, Cooley's *Vocational Education in Europe* (Hogan, 1985, p. 175). It should be added that Kerschensteiner was interested in the public school and did not speak or write about a separate vocational system, but, rather, of modifications of the ordinary general education school and of a continuation school that was more definitely vocational in objective.

continuation schools "whose equipment, corps of teachers, and board of administration must be in the closest possible relation to the occupations" (Hogan, 1985, p. 175). As Hogan writes,

> The dual system of schools, a general education system and a vocational education system beginning at seventh grade, would have separate boards of control. The vocational school would be governed by independent boards of men with practical experience in industry and commerce, and funded by a special tax one-half provided by the state in the shape of a grant, and the other half raised locally. (pp. 175-176)

Repeated attempts were made to win the Illinois Legislature's approval of some variant of the basic Cooley plan. All efforts failed. Fear doomed the idea, however sturdy or weak the arguments pro or con. The unions feared employers. Tyrannical controls were feared by such a philosopher-friend of John Dewey as George Herbert Mead, whose fears were joined by those of Dewey (Hogan, 1985). We already have reported Superintendent Ella Flagg Young's fears that the separation of social classes would be furthered with mounting hostility and contempt. She also feared for the authority of a public school superintendency.

Hogan further states that Dewey was opposed to the Cooley Bill on three grounds:

> First, the proposed plan could not but be administratively inefficient, since the plan divided and duplicated educational administration. [An argument that Dewey well might have heard from Superintendent Young.] Second, the segregation of academic from vocational education would "inhibit the transformation of traditional pedagogy along progressive lines." And third, the segregation of students into general and vocational schools would injure "the true interests of the pupils who attended the so-called vocational schools" since they would be denied an education in which industrial training was integrated into an education for citizenship. (p. 180)

Hogan assures his readers that "Dewey was not in any way opposed to industrial training—indeed, he agreed that its "right development will do more to make public education truly democratic than any other single agency now under consideration" (p. 180). But, Hogan has Dewey argue that the only "economical and effective" way to do this was "to expand and supplement the present school system" rather than "to establish separate vocational schools . . . to integrate industrial training into the composite high school." In this fashion, Hogan adds, "Dewey believed training for employment could be happily

married to training for citizenship" (p. 180). It is quite difficult to know what Dewey intended by this integration—what it would look like.[15]

That really did not matter. A plan to establish a separate vocational school system had been scuttled and the stage was set for generalizing this victory. No matter that by 1919 the Congress passed legislation known as Smith-Hughes, whose support of vocational education was inspired by the war and the need for skilled workers. No matter that powerful interests backed vocational education and Smith-Hughes was succeeded by a parade of legislation favoring financial support of vocational preparation. None of this truly mattered for the purposes of this analysis because vocational preparation failed to gain stature, even in the eyes of those businessmen who were its most conscientious supporters. The support hinged on a desire for able workers and preparation that would give young people from less than affluent families skills with which to make a living.

An unexpected objection was made by the eminent philosopher John Dewey, hailed by thoughtful proponents of a practical education as an ally, someone who had rejected traditional education and its custom of separating hand and mind, work and thought, practice and theory, the social model of a governing and owning upper class exploiting a subordinate lower class. His readers knew that Dewey stood against all dualisms and thought most spawned by the social-class dualism of the upper and lower, the haves and have-nots, those who governed with their minds as against those who toiled with their hands.

Herbert Spencer

While the manual training movement could not be thought preparation for a vocation, there were those who took that purpose to heart. Among professional educators, Snedden and Prosser may be recalled most readily as pioneers who, early in this century, called for publicly supported vocational schools, schools that prepared for occupations. But while Snedden and Prosser did not succeed, there was a voice making a case for taking seriously readiness for earning a living. The voice was that of a social philosopher, Herbert Spencer, who enjoyed very considerable popularity among intellectuals as well as

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[15] The best examples we have are the schools whose curriculums Dewey approved (Dewey & Dewey, 1915).

leaders of American business and industry. Herbert Spencer (1820-1903) was an Englishman, a close student of evolution, and a frequent critic of what he thought a trivial and decorative education. Among the explicitly educational essays of Spencer, the best known is "What Knowledge is of Most Worth?" which appeared in *The Westminster Review*, July 1859, and was the last in a series of four papers. The four essays were gathered into a book, *Education: Intellectual, Moral, and Physical* (1896, c. 1860), whose American publication was in 1861. This slim volume made a great impression in this country and did a great deal for the idea that preparation for making a living was a paramount responsibility of education, whether public or private.

When Spencer died, the most important of the contemporary critics of his thought, Kennedy (1978), wrote of him as "both the most famous and the most popular philosopher of his age. Many saw him as a second Newton" (p. 123). Whether or not this praise was hyperbole, Spencer's reputation should be set down, if only to justify his having been taken so seriously in the United States. It will not be difficult to document the stature Spencer achieved, but the meaning of that high, if ephemeral, status was Spencer's insistence on an utilitarian view of education.

This is not the place to prècis Spencer's background. It will be enough to list a few facts that suggest Spencer's reputation. (For further information on Spencer and his thoughts, see Peel, 1971; Spencer, 1904; Duncan, 1908; and Royce, 1904.) Although Spencer may be thought of as a sociologist, the first to use the English term "sociology" (Peel, 1971, p. vii)—or, perhaps, as a psychologist concerned with society and its influence on a person and people—Spencer's many publications stem from a detailed study of biological evolution. Limiting the critics of Spencer's evolutionary hypotheses to Englishmen, Peel has it that "Hooker, Darwin, Huxley, Galton and A. R. Wallace all spoke highly of both his [Spencer's] intellect and its scientific achievements. Wallace wrote of 'the sum' of his great intellectual powers and Galton, who disagreed profoundly with his theories, of his 'magnificent intellect'" (p. 5).[16] Darwin found Spencer's *Essays* (1910a) "admirable" (Kennedy, 1978, p. 71) and the youthful biologist wrote, not about Spencer's biology—Spencer was not a biologist—but in praise of Spencer as a

[16] We can appreciate how well Spencer fitted into the intellectual society of Victorian England when we know that Spencer was voted membership in the exclusive X-Club, a dinner club which first met in 1864 and was host to "a few of the most advanced men of science—Huxley, . . . Tyndall and Lubbock among others" (Kennedy, 1978, p. 24; Mac Leod, 1970, pp. 310-311, 321n).

philosopher, "the greatest living philosopher in England, perhaps equal to any that have lived" (p. 70). Spencer could have been thought a social philosopher, a sociologist *cum* philosopher, who published *The Study of Sociology* (1882) and three volumes of *The Principles of Sociology* (1880-1897) that developed an earlier study, *Social Statics* (1851). His publications also included what now will be thought political philosophy: *The Man Versus the State* (1910b), *Various Fragments* (1898), *Facts and Comments* (1902). More directly in philosophy are two volumes on ethics—*The Principles of Ethics* (1892-1893). The corpus includes publications in psychology and biology, two volumes of *The Principles of Biology*, (1865-1867), as well as an earlier volume, *Principles of Psychology* (1855). In passing, we might note that William James used the *Principles of Psychology* as a text in his undergraduate course in psychology at Harvard.

But much of what Spencer was to write by way of a comprehensive, consistent, and coherent system of thought was foreshadowed in his *First Principles*, whose first edition came to press in 1862, rather early in Spencer's career. It may have been the reflections Spencer wrote into this book that led Darwin to laud Spencer as a philosopher. Surely, Royce, himself one of the foremost American philosophers, accepted Spencer as a philosopher, as did Dewey, who, in fact, wrote "The Philosophical Work of Herbert Spencer" in 1904. The encyclopedism, together with the consistency with which Spencer built his intellectual system, is what struck both Royce and Dewey.[17] Dewey was specially prescient in pinpointing the consistency in Spencer's developmental-evolutionary theory. In his words,

> The point that seems to me so significant (and, indeed, so absolutely necessary to take into the reckoning), when we balance accounts with the intellectual work of Mr. Spencer, is this sitting down to achieve a preconceived idea, an idea, moreover, of a synthetic, deductive rendering of all that is in the Universe. The point stands forth in all its simplicity and daring every time we open our *First Principles*. We find there, republished, the prospectus of 1860, the program of the entire Synthetic Philosophy. And the more we compare the achievement with the announcement, the more we are struck with the way in which the whole scheme stands complete, detached, able to go alone from the very start. . . . Spencer's *system* was a system from the very start. It was a system in conception, not merely an issue. It was one by the volition of its author, complete, compact, coherent. (pp. 194-195)

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[17] This was all the more striking in light of Royce's position as a leader in American idealist thought and Dewey's initial antagonism to Spencer's utilitarianism expressed when Dewey still was an idealist.

This is not the place in which to enlarge on Spencer's reputation. It is enough to recall that there are indices of high status in many countries such as the fact that Spencer received honors from eighteen learned societies in Italy, France, the United States, Denmark, Belgium, Greece, Austria, Hungary, and Russia (Kennedy, 1978, p. 119).[18] But it was in the United States that Spencer's image shown brightest. Here "hundreds of thousands of his books were sold and . . . his theories were an acknowledged pressure on legislation" (Peel, 1971, p. 2).

Spencer's fervent appeal for attention to family responsibilities and preparation for earning one's living was fortified by his contempt for what passed for a proper education. The enthusiastic reception of Spencer's thought by many Americans will be commented on, but this paper has education as its focus and what Spencer wrote on education was partly responsible for the American welcome given Spencer's ideas. Then, too, there were many who welcomed his social philosophy with its emphasis on individual responsibility. There can be no doubt of Spencer's confidence in the potential for achievement by individuals (who had inherited their abilities) untrammeled by politically inspired regulations. There also should be no doubt that Spencer was not a social activist caught up in social policy at the expense of his reading and writing on the role of science in human development. Just here is the nub of Spencer's thoughts on education.

Among Spencer's explicitly educational essays, the best known is "What Knowledge is of Most Worth?" Spencer thought of "worth" in only one way. If education did not encourage survival, did not promote development, it was of lesser value than that which did. What conventional English education valued most was what Spencer felt should be valued less, if not least. Spencer had stated that belief emphatically in an earlier essay, "Intellectual Education," published in May 1854. As often proved to be the case, Spencer began "Intellectual Education," with an assault on dogmatism in thought and teaching. As any reader of Spencer's writing on education will recognize, dogmatism was a favorite target; from boyhood he had learned to seek the causes of whatever he observed. Equally familiar to a reader of Spencer was a conviction that the fashion in education reflected whatever was currently fashionable. His overriding concern was for preparation.

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[18] All of Spencer's major works were available in Germany and Russia by 1876 and thirty-two Japanese translations appeared from 1877 to 1900. Spencer was very popular among Japanese intellectuals. While Spencer was visiting and lecturing in the United States, the Japanese Ambassador to the United States, Mori Arinori, sought Spencer's advice on a draft constitution for Japan.

Preparation is the key word. Preparation is everywhere in Spencer's words on education and has a central bearing on his views of vocational preparation. But Spencer (1897, c. 1860) knew that work and its place in the world was not the be-all and end-all of preparation. Preparation for family life was one of his objectives:

> While many years are spent by a boy in gaining knowledge, of which the chief value is that it constitutes 'the education of a gentleman' and while many years are spent by a girl in those decorative acquirements which fit her for evening parties; not an hour is spent by either of them in preparation for that gravest of all responsibilities—the management of a family. (p. 104)

Or, again, when he complains,

> Mamas who have been taught little but language, music, and accomplishments, aided by nurses full of antiquated prejudices, are held competent regulators of food, clothing, and exercise of children. Meanwhile the fathers read books and periodicals, attend agricultural meetings, try experiments, and engage in discussions, all with the view of discovering how to fatten pigs. (pp. 221-222)

No student of education could have put Spencer's conclusion more emphatically than did he: "*The subject which involves all other subjects, and therefore the subject in which the education of everyone should culminate is, the Theory and Practice of Education.*" (p. 163).

Is there any question that this drumbeat would be heard again? It sounded in the 1918 publication of the National Education Association, Commission on the Reorganization of Secondary Education, *Cardinal Principles of Secondary Education.* Those who wrote for the National Education Association did not acknowledge Spencer—perhaps they never read him, though this is hardly credible—but his philosophy of education was the source, however indirectly, of their "cardinal principles." We would sound the same note with respect to Bobbitt's (1918) or Charters' (1929) influential books on curriculum.

The practicality of Spencer's (1897, c. 1860) understanding of what education was of most worth led to his contempt for an education that most well-tutored Westerners esteemed. In his words: "To prepare us for complete living is the function which education has to discharge and the only rational mode of judging of any education course is to judge in what degree it discharges such function" (p. 31). His caustic commentary married an abstract concept of evolution with a desire for utility. In this vein we read that,

> We are guilty of something like a platitude when we say that throughout his after-career a boy, in nine cases out of ten, applies his Latin and Greek to no practical purposes. The remark is trite that in his shop, or his office, in managing his estate or his family, in playing his part as director of a bank or a railway he is very little aided by this knowledge he took, so it drops out of his memory, and if occasionally he vents a Latin quotation, or alludes of some Greek myth, it is less to throw light on the topic at hand than for the sake of effect. If we inquire what is the real motive for giving boys a classical education, we find it to be simple conformity to public opinion. Men dress their children's minds as they do their bodies, in the prevailing fashion. (pp. 24-25).

And when Spencer wrote about the education of girls he proved no less bitter:

> Dancing, deportment, the piano, singing, drawing—what a large space do these occupy! If you ask why Italian and German are learnt, you will find that, under all the sham reasons given, the real reason is, that a knowledge of these tongues is thought ladylike. It is not that the books written in them may be utilized, which they scarcely ever are; but that Italian and German songs may be sung, and that the extent of attainment may bring whispered admiration. The births, deaths, and marriages of kings, and other like historical trivialities, are committed to memory, not because of any direct benefits that can possibly result from knowing them, but because society considers them parts of a good education—because the absence of such knowledge may bring the contempt of others. When we have named reading, writing, spelling, grammar, arithmetic, and sewing, we have named about all the things a girl is taught with a view to their direct uses in life; and even some of them have more reference to the good opinion of others than to immediate personal welfare. (pp. 24-25)

These critiques of an impractical education were first published in 1859 when the readers of *The Westminster Review* were confronted by the challenge implicit in the rhetorical question posed by the title "What Knowledge Is of Most Worth?" Thanks to the interest of an American taken by Spencer's approach, American readers were to have Spencer's little book, *Education: Intellectual, Moral, and Physical* in 1861, the first year of the Civil War. It made an ever-increasing impression. Spencer's challenge was praised by many, sometimes extravagantly. Andrew Carnegie was enthralled. For Carnegie, Spencer was the "Master Teacher" and so Carnegie addressed a letter to the dying Spencer in 1903, signing himself, "Your Devoted Pupil" (Peel, 1971, p. 2). By then, any number of Americans, and not only businessmen, were discussing Spencer's recommendations for a fundamental reorientation of education.

We will say no more of Spencer except this: Spencer's educational thought and its warm reception in this country—of which all too little has been written—is a model of the

possibilities for deepening the understanding of both academic and vocational teachers. This extension of the professional knowledge should have the effect of bringing to collaborative teaching a depth of view that will invite many students to investigate issues with renewed interest and consequent vigor.

While an early supporter of Pestalozzian theory, especially the importance of discipline in observation, Harris was vociferous in his opposition to Spencerian educational thought. Harris's essay, "Herbert Spencer and What to Study" (1902) is one representative sample of his published evaluations. His assessment for the National Education Association, made in 1904 when Harris was Commissioner of Education, is another. This rebuke of Spencerian educational philosophy matters to us because it added to the dimming of vocational preparation's reputation.

In coming to grips with Harris's (1902) feelings about Spencer, it helps to know that Harris felt that Spencer's utilitarianism blinded the Englishman to the advantage offered by religion and morals. Harris felt that both were an indispensable help in the government of human relations. In the absence of religion and religiously based ethical norms, Harris was certain that humans would behave selfishly and arouse hostility. Religion and morals, Harris argued, are the first studies in the curriculum, rather than the physiology that Spencer placed in first rank (pp. 136-137). Harris followed this rebuke of Spencer with an objection to what he noted as Spencer's subsequent steps, concluding that literature was a key study, not the selection of a trade or even training in citizenship or studies that might enrich leisure.

What seemed to rankle most was that Spencer relegated literature and art to a lesser place, including them in the curriculum only "if there is leisure for it" (Harris, 1902, p. 142). Equally repugnant to Harris was Spencer's repeated rejection of classics as a proper area of study in the secondary school. "I will say at once," Harris writes with seeming emphasis, and, perhaps, sarcasm, "that Greek and Latin open a great field of study into what may be called the embryology of our civilization, using an important technical term borrowed from biology, Mr. Spencer's strongest special field of work" (p. 145). For the United States' Commissioner of Education, academic and vocational studies occupied two very different educational worlds and the one Harris approved for the high school was heavily weighted with the literary humanities.

The thrust of Harris's 1904 remarks for the National Education Association complemented his critique of Spencer's educational philosophy. Harris urged educators to "set up a spiritual principle as the proper source of evolution" (p. 215), although, as an educator, Harris was more concerned with self-activity. For both he felt that consciousness and will were requisite but denied in Spencer's writing (p. 216).

This is not the place to argue the merits of Harris's charge. It is enough to know that Harris typified both the overwhelming philosophic reaction to Spencer's views and the preponderance of the anti-Spencerian criticism. It was this last that Harris felt belonged in the Atlanta meetings of the National Education Association. There Harris (1904) expressed what irritated him most about the Spencerian choice of sociology and biology as crowning subjects of study (pp. 219-220). To Harris, this displacement of morals and religion, and the classical languages whose literature was freighted with them, was scandalous. Passage after passage led to a final condemnation:

> He [Spencer] does not see that literature and art, exclusively devoted to the portrayal of human nature in its transmutation of feeling through thoughts into deeds, are necessarily the central branch of study in the school education thruout [sic] its entire course. It does not occur to him to consider the method of his favorite science, biology, and he therefore does not see that Latin and Greek and the Hebrew oracles are in our education a study of the embryology of civilization, much as the study of growth of animals and plants as eggs and seeds furnishes the explanation of their development and shows the present trend also—for embryology is prophetic as well as historic. (p. 222)

The fact that the United States' Commissioner of Education led off in the first of five presentations having to do with one or another aspect of Spencer's educational thought,[19] signalled the impact of Spencer's theories on discussions of curriculum appropriate for education in American schools. For the most part, the criticism was bitterly negative. Absolute idealism dominated more than academic philosophy. For Cook (1904), President of Northern Illinois State Normal School, whose discussion of Spencer followed that of Harris in the National Education Association series, Spencer "employs the torch

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[19] The others were John W. Cook, President of Northern Illinois State Normal School in De Kalb, whose remarks were titled "Herbert Spencer's Four Famous Essays" (1904); W. S. Sutton, Professor of the Science and Arts of Education, University of Texas at Austin, the title of whose essay was "Herbert Spencer's Individuality As Manifested In His Educational Thinking" (1904); A. E. Winship, editor of the *Journal of Education*, writing "Herbert Spencer As An Educational Force" (1904); and W. Rose, "Herbert Spencer As A Philosopher" (1904).

rather than the winnowing fan and follows the lead of the revolutionary Rousseau rather than that of the devout and reflective Comenius" (p. 224).

Professor Sutton (1904) followed Cook with an assessment that was no less biting:

> It is no wonder that many conventional schoolmen in the English-speaking world read his [Spencer's] philippics with mingled feelings of disgust and dismay. If Spencer was right, they were wrong; if his teaching should triumph, theirs would go, and they likewise. Teachers of the classics especially looked upon him as the chief of the Philistines, and with tongue and pen sought to punish him for what they called his pedagogic presumption and wickedness. (p. 227)

Although John Dewey was not present at the 1904 meetings of the National Education Association and did not take part in the analysis of Spencer's views, his own posture remained negative. Some years after the National Education Association meetings, Dewey had an opportunity once again to react to Spencer's vision. It was shortly before American participation in the first World War. For the most part, Spencerian views were neglected.[20] What troubled Dewey was not what Spencer thought of most worth in education, but Spencer's insistence that men had to adapt to the environment rather than changing it to fit their purposes.[21]

Dewey had moved far away from Hegelian metaphysics and from conventional Protestantism as well. Spencer's characterization of God as absolute unknowable energy was not sufficiently emancipated now. Scornfully, Dewey wrote of Spencer's notion as a

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[20] One of the few who wrote on Spencer's educational philosophy was Davies (1915). As though anticipating the argument of Kimball's (1932) *Sociology and Education*, Davies pointed out that Spencer "underestimated the power of man to mold nature to his liking" (p. 271). Davies proceeded to contrast Spencer's outlook with that of Lester F. Ward. Both Davies and Kimball well might have added the name of John Dewey, who became known for continuously protesting against Spencer's alleged vision of human beings adjusting to, rather than modifying, the environment. For example, when Dewey (1979) wrote on the term "adaptation" for the *Cyclopedia of Education*, he singled Spencer for comment: "Spencer's influence is largely responsible for the popular misconception by which both education and evolution are construed as the moldings of pliable and passive organic beings into agreement with fixed and static environing conditions. This view," concludes Dewey, "leads to a perversion, practical and theoretical, of education, since it makes its aim the accommodation of individuals to the existing type of social polity and customs, a method which may train followers, but not leaders" (pp. 364-365).

[21] Writing on the contrast of Spencer with Henri Bergson, Dewey comments: "Spencer treats the correspondence of life and mind to the environment not as an instrumentality in further developing, but as a fixed achievement on the part of the organism; not as a resource of a developing life, but as a necessity of the conservation of life. The accurate correspondence of subjective to objective relations guides us "to successful action and the consequent maintenance of life" [quoting from Spencer, 1862, Sec. 25, and Dewey, 1977, pp. 69-70].

"faded piece of metaphysical goods" (Hahn, 1977). It was as though, to quote from Burnett's (1977) conclusion on Dewey's critique of Spencer, the theory was "dead, totally inert. It represents, in terms of Dewey's analysis of inquiry, the deductive stage isolated from the living process of inquiry. So any relation of the formal scheme [of Spencer's] to the critical ongoing life of the world can be only accidental."

Dewey may have felt that Spencer doubted that men and women could dramatically alter their environment to suit their purposes, but it would have been difficult to persuade Spencer's readers that the English social philosopher did not believe that individuals were capable of shaping their futures. Even a cursory reading of Spencer produced evidence that he was wedded to the expectation that they could and that schools were obligated to help. Though few might quarrel with that belief, Spencer removed his claim from simple, bland rhetorical assertion. In its stead, he suggested a hierarchy of educational objectives such that high on the list was the obligation of education to help the young to prepare to make a living. Just at that point, Spencer's understanding of education ran head on into those of John Dewey, the Dewey who had moved away from Hegelian Idealism to a philosophy of social conscience and his version of Darwinian evolutionism.

The confrontation was not direct. The immediate object of Dewey's objections was Snedden,[22] a fellow professor at Columbia, but on the faculty of Teachers College rather than Columbia's Department of General Philosophy. Dewey might have been surprised to think that Spencer was part of the target. After all, the controversy dates from 1915; Spencer had died more than a decade earlier and very few educators paid attention to his thought by this time when competition for foreign markets began to involve education (Wirth, 1972; 1974). As an example of how irrelevant Spencer seemed, his name was not mentioned in the spirited exchange between Dewey and Snedden carried by *The New Republic* in the Spring of 1915. The absence of direct reference to Spencer was not the only sign that the Dewey-Snedden exchange was certain to be overlooked. But it was crucial. For many years after there was no noteworthy attempt to mount an intensive program of vocational preparation. Nor was there to be a strong and clear rationale for

[22] Prosser, Snedden's close associate, should be paired with Snedden; it is difficult to think that Snedden's ideas were limited to one man. Their importance for us is precisely because they were not. Prosser had important links with a movement promoting vocational preparation and Dewey's stand soon affected not only the Snedden-Prosser philosophy, but the idea of vocational preparation as either free-standing or an appendage of general education tailored to the needs of those not thought academically promising.

vocational preparation as part of general education—nothing at all comparable to the case made for polytechnical education.

The debate was one-sided. By 1915, Dewey enjoyed a formidable reputation as a social thinker; Snedden enjoyed a much more circumscribed audience. The fact that Dewey was extremely difficult to understand did his views no apparent harm; few remembered that Dewey had held an Idealistic philosophy, one whose terms were obscure. Then, too, Dewey benefitted from the poor repute of big business. Snedden probably came across to the readers of *The New Republic* as the servant of industry, a man whose educational philosophy would have stunted the development of an independent, civilized, and well-informed citizen. Compounding the difficulty in reducing the Dewey-Snedden exchange to vocational preparation is the unfortunate fact that it has been understood to turn on the attainment of "social efficiency," presumably Snedden's ideal. That was enough to damn Snedden then and later, at least in the eyes of those who scornfully rejected that goal.

The phrase, "social efficiency,"[23] has been used often enough, but without benefit of explication. Walter Drost (1967), a close student of Snedden, has done well in undertaking that difficult definition:

> Social efficiency is the position in education that calls for the direct teaching of knowledge, attitudes, and skills, intended to shape the individual to predetermined social characteristics. It presumes to improve society by making its members more vocationally useful; and socially responsible. Applied to the curriculum, social efficiency usually leads to demands for reorganization of the studies, sometimes for a whole new synthesis of new and more "practical" subjects. Snedden called upon the traditional subjects to "pass in review" to determine their possible contributions to "the more specific and satisfactory aims of education." (pp. 3-4)

Social efficiency seemed never to have been applauded, only scorned by the many who, in the same breath, condemned Social Darwinism[24] as insisting that humans had to learn the realities of the environment (social, economic, and political, as well as physical) and conform. Dewey was an intellectual leader of those who rejected Social Darwinism, or

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[23] Bobbitt and Charters in their time were lumped with advocates of social efficiency. Their modern counterparts are Popham (1969) and Mager (1975). Popham and Mager are associated with those who advocate objective-based curriculum design (Walker, 1985).

[24] Kennedy (1978) has it that Spencer was "known as the arch-Social Darwinist: "the man who opposed any political interference with the individual's adaptation to his or her society, and who advocated that every adult should accept and suffer the consequences of his or her nature and activity."

what was labelled and libeled in its name. Coupled with Social Darwinism was such a phenomenon as the Taylor time-and-motion studies that promised to increase social efficiency. Years later there were to be those who, as Wirth, damned social efficiency while applauding the individualism of Paul Goodman—an individualism expressed half a century later by Goodman's *People or Personnel and Like a Conquered Province* (1968).[25] The sentence of Goodman that appealed most to Wirth asks "whether or not our beautiful libertarian, pluralist and populist experiment is viable in modern conditions" (p. 274). Wirth (1974) can be quoted on how this castigation of social efficiency applied to the Dewey-Snedden exchange in *The New Republic*:

> In the liberal-vocational studies debates prior to Smith Hughes, the technocratic drives of what Paul Goodman calls the Empty Society of mindless productivity showed in the social efficiency of David Snedden and Charles Prosser. On the other hand, John Dewey tried to define an approach that would combine democratic and humanistic values with science and industry. (p. 169)

What Snedden asked for was much like what had been sought in Illinois by the Cooley Bill, that is, a secondary school for those who wished vocational preparation more fully available than in the vast majority of high schools. The teachers in such schools would be women and men who had years of successful productive experience.[26] For Dewey, this was no less than neglect of both the potential of the individual for understanding society and culture as Dewey thought of them—or cooperating with others in the reconstruction of society and culture.

The merits of the arguments need concern us less than the philosophic stands taken by Dewey and by Snedden. In essence, Dewey assumed that Snedden favored the establishment of a vocational preparatory school, most of whose activities would be aimed at preparing young people for skilled work. In that assumption, Dewey was correct. But Snedden did not believe that this preparatory emphasis precluded understanding society and its cultures. Nor did Snedden see it graduating young women and men who would be uncritical tools of business and industry. Snedden did hold that society would be improved by having its members employable, as well as socially responsible. Fairness suggests that

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[25] As Wirth (1974) has it, "To be blunt and to oversimplify the choice then [in 1917] and now is whether schools are to become servants of technocratic efficiency needs, or whether they can act to help men humanize life under technology" (p. 169).

[26] The qualifications of the teachers was not spelled out by Snedden in *The New Republic*, but was made plain by Prosser in both Prosser and Allen (1925) and Prosser and Quigley (1949).

Snedden's understanding of social efficiency was not cut from the same cloth as Frederick Taylor's recommendations on how to promote business efficiency (Drost, 1967, p. 4). For example, efficiency experts, reviewing Snedden's recommendations for a special normal school program for training socially efficient rural school teachers, branded them economically inefficient:

> They measured the program in terms of cost per unit of instruction, while Snedden thought in terms of changed individuals. For his part he condemned "factory methods" that were attempting to reduce the cost of education by applying the concepts of "quantity production and standardization of parts" to the schools. He said this system was only productive of "herd-alike" uniformity which ran counter to the differentiation upon which his social efficiency rested. (pp. 4-5)

It is important to do more than mention Snedden in connection with American reaction to Spencer and the relation between that reaction and the nature and status of vocational education in the United States. Spencer was a sociologist or social philosopher, while Snedden was a pioneer in the American sociology of education and someone who read Spencer with more acceptance than did his colleague, Dewey. As Drost (1967) tells it, "years earlier, while a young schoolman in Santa Paula, California, he [Snedden] devoted most of his free time to reading and study of the complete works of Herbert Spencer. This experience appears to have forever alienated him from the classical tradition" (p. 5),[27] an alienation that would not have endeared him to Harris.

To shorten a most important but lengthy story of the beginnings of Federal participation in American vocational education, Snedden, together with Charles Prosser, began a campaign that succeeded in persuading the Congress of 1917 to pass the Smith-Hughes bill. (For an excellent description of the development of the Smith-Hughes Act, see McClure, Chrisman, & Mock, 1985.) The precedent for Federal participation in the

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[27] Snedden's rejection of the classical tradition did not come from an ignorance of the classics. He had studied both Greek and Latin while enrolled in California's St. Vincent's College. During the time in which the Vincential Fathers taught Snedden, he roomed at an aunt's house and there met his cousin, Agnes Wilson, a student at the University of California: "It was she who first introduced him to the works of Huxley, Darwin, and Spencer, books he enjoyed reading and discussing with her" (Drost, 1967, p. 123). While the classics lost some of their charm for Snedden, at no point in his career did he wish them to be abandoned. He was convinced, however, that neither the classics nor other portions of the standard curriculum of the schools were stimulating for many students. Snedden's observations and his study succeeded in persuading him that a very large faction of those in school were unable to profit from it. Dewey and others notwithstanding, Snedden grew in the conviction that these students would gain far more from a full-time vocational school. The comprehensive high school, however, was ineffectual; the industrial arts programs he felt to be a fraud dispensing "denatured" vocational education (p. 188).

financial support of vocational preparation had been established. There never again would be a politically powerful opposition. Vocational preparation would seem to have come into its own, but what in England is called "parity of esteem" has not been achieved. Although the failure cannot be explained by citing any one cause, such differences in terms as that holding for "education" as distinguished from "training" have lent a subtle suggestion that education is academic and for leaders in intellectual, political, economic, and even artistic affairs—where the fine arts often are accepted as somehow superior to the applied arts of design. Training is something else altogether. Further confusion flows from the verbal muddle surrounding the connotations of general and liberal education. While this miasma will not readily evaporate, attempts at clarification are in order. That is the initial aim of the third paper in this series. The other is rhetorical, that is, to argue that general and liberal education, as well as the vocational continuum, should be remade. While this essay will do no more than hint at a reconstructed course of study, the change should have promise for a strengthened curriculum, as well as a diminution of invidious comparisons and an undermining of morale of those studying and teaching in vocational preparation.

A MATTER OF DEFINITION

Although risking repetitiousness, we wish to cement the idea that a continuum holds between (1) the most specific form of teaching, exercising, and honing the skills of a trade; (2) developing technical competence; and (3) achieving expertise as a professional. The thought that a professional has a great deal in common with a skilled worker should not be surprising. Both require planned preparation; both have ways to measure their skill and have skills to market. The first difficulty is not about any of the foregoing; it is about what is to be thought a profession. Are there what once were called "learned professions"—law, medicine, and divinity? Is teaching a profession? Is profession to be contrasted with amateur, suggesting that receiving pay diminishes one's status? This last prompts reminder that, etymologically, the word "profession" is vocational. Latin in its origin, profession derives from *professio*, "a public declaration, a business or profession that one publicly avows" (*The Compact Edition* [OED], 1971, p. 2316). For centuries in the West, payment for service lowered one's social status. This is to be combined with a tendency to think of the professional-vocational as truly different from a curriculum in arts and sciences. And this perception is not recent. Bacon is quoted in the OED as writing in

his *Advancement of Learning* (1605), "Amongst so many great foundations of colleges in Europe I find strange that they are all dedicated to professions, and none left free to Art and Sciences at large" (p. 2316).

And what of the distinction between training and education? Will it reenforce the disparity in status just noted? Looking through the entries of the OED (1971) on education and on training, the question is not immediately answered; though one myth is laid to rest. The myth has it that training is for animals; education is the exercise of humans. Historically, the term "training" has not been reserved for animals, with education being used in the upbringing of humans. For a long time, education and training were used interchangeably. In Starkey's *England* (1538) we read: "Theyr hauks and theyr hounds, of whose educatyon they have grete care" (OED, p. 189). But Starkey could have been writing of children's upbringing, their education. As the OED defines education, the word derives from the Latin *educare*, to bring up, as with either young children or young animals. But *educare* (to bring up) and *educere* (to lead forth) were sometimes "used nearly in the same sense" (p. 833).[28] The conclusion to which this review of the etymological record leads is that it is equally valid to write of vocational education as it is of vocational training. *Pari passu* general education could be put down as general training. The fact that customary usage invariably has the word "education" associated with general and vocational followed by the word "training" is beside the point and certainly does not justify seating vocational below the academic salt.

Unhappily, the historical record states a case of vocational preparation failing to make the grade in its academic status. As the centuries passed, there came to be frequent use of limiting words, those "delimiting the nature or the predominating subject of instruction or the kind of life for which it prepares as classical, legal, medical, technical, commercial art education" (OED, 1971, p. 833). None of these limited specialties suggest the ranking of status which, certainly in the past—and not the distant past—would have placed the classical well ahead of either the technical or commercial art education. It simply was assumed that study of the classics both disciplined the mind and put one in touch with enduring ideals of Western civilization.

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[28] To be sure, *educere* came to emphasize eliciting or developing that which is potential. "Education," wrote Samuel Coleridge in his *Lay Sermons* (1816), "consists in educing the faculties and forming the habits."

Something did happen that challenged the assumption that the best education disciplined the mind through the study of languages, mathematics, and a very few other subjects. The claim that the mind best could be disciplined and informed through an education in the classical languages and literature, as well as a few other subjects in what is termed the liberal arts, was seriously undermined by the empirical findings of the psychologist, Edgar Lee Thorndike (1913).[29] Vocational educators can garner little satisfaction from that. Undermining an education that was thought to be "the best for the best" did not bring added credibility to vocational preparation, not even the preparation of the "professional educator." The attitude still prevails that she or he is a teacher rather than an educator.

In the hope that progress might be made in the reconciliation of vocational and nonvocational instruction by pressing an inquiry into the characteristics of someone whose education has been sound, the idea of a *general* education promised to be more fruitful than searching the distinction between education and training. The ideal of a general education, one possessed by all civilized people in a given community, although quite old in Western thought on education, still is pervasive. It is the *enkuklios paidiea*[30] of ancient Greece, today's French *culture générale*, or German *algemeine Bildung* and Russian *obshchee obrazovane*.

Had the matter been left with delimiting the scope of a general education in its original sense, it would have been easier to cope. For one thing, it is conceivable that general agreement would have limited general education to the elementary and secondary schooling. Most of the world already thought in those terms and American educators would have had to make a clear case for extending general education into the collegiate or third level of schooling/education. Presuming that this could have been done, a logical progression in the argument is to make a case for the curricular content of a sturdy general education—including the issue of adjusting to individual differences of many sorts.

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[29] As will be remembered, Thorndike's research on "transfer of training" suggested that the study of Greek and Latin were not especially effective in training the mind. Thorndike's conclusion was that, "A change in one function alters another only insofar as the two functions have identical elements." Gage and Berliner (1984) later explained that, "Because of studies like this, Thorndike argued against the theory of formal discipline, which upheld the value of studying certain subjects because they would provide skills or principles useful in other subjects. This doctrine of formal discipline was defended by teachers of Latin, Greek, and mathematics on the grounds that their subjects had great value in training the mind" (p. 353).

[30] Connoting the education that encircles all who pretend to be civilized or that knowledge, those customs and habits, that civilized people have in common.

But this was not to be. At least in the United States, general education took on almost as many meanings as Joseph's cloak did colors. Although we shall look at a very limited sample, nowhere do we see evidence that those aware of vocational preparation had impact or input. Put in terms of curricular content, what is to be taught and learned, general education seems quite untouched by economic facts-of-life, the marketplace, earning a living, and so much else that links to vocational preparation. That topic is one to which we shall return in the final subsection of this essay; it would be premature to move to curricular questions when critical and quite basic definitions are yet to be made clear.

One such definition is a distinction between liberal and general education, a distinction that is relevant because a liberal education has been understood as not specializing, as not preparing for making a living as a skilled worker, a technician, or a professional, but as parading their common cultural heritage before students, packaged in courses some of which were to be required, others elected. (For an interesting review, see Best, 1988.)

Without recalling details in the long history of the *artes liberales*, it may be enough to know that the modern use of the phrase most often sees it alive in higher education. The liberal arts college is typical, whether it stands alone as an undergraduate institution or as a unit within an university that offers graduate and professional programs. While these institutional embodiments of the liberal arts deny being host to special programs of vocational preparation, their courses usually include economics, political thought and science, sociology, and such offerings as women's studies, which do invite attention to behavior and events that should also be thought and talked about in terms of adequate vocational preparation. Again, the academic rapprochement of general, as well as liberal education, with the vocational, will take shape as the final argument of this essay. Drawing attention to liberal education serves as an added reminder that one more aspect of education, the liberal, has turned away from ideas that might have been available from those aware of the potential within the vocational. It is not as an afterthought that we grant that for some time to be thought liberally educated not only connoted that one's schooling did not have vocational application. It also shied away from science and certainly technology. To quote Walker (1985):

> To be considered an educated person has never required more than a smattering of scientific and technical knowledge, if that. Our social and educational elite have not traditionally received a scientific or technical

> education. There are elective subjects in high school. In the university, all students are required to complete some courses in the cultural subjects, but few universities impose similar requirements to study science and mathematics on their nonscience majors. Language and the cultural subjects have been and remain the central defining characteristics of an educated person. (p. 95)

While we have not dwelt on the fact, American educators have been restive when confronted with the background of liberal arts. They have joined in assaulting both specialization—as modelled by the professional curriculums of teaching, law, medicine, dentistry, theology, and others—and vocationalism, but seem almost anxious in their protest of adherence to an ideology at once liberal and democratic. Among the most recent of those outspoken in their advocacy of liberal education, Kliebard (1988) has seemed embarrassed, not as he should have been ashamed of linking Spencer's educational philosophy with that of Gradgrind, pilloried by Dickens in *Hard Times*, but in reflecting on the handicap of liberal arts struggling to maintain its

> status as an ideal suited to a social, (or at least an intellectual) elite who had the leisure to pursue it, a general education tied to efficient performance of life's tasks predominated for the many. The ancient dichotomy between labor and leisure with its implications for strong class divisions was thus maintained. Secondly, the internal reconstruction of the elements of a liberal education proceeded only haphazardly. (p. 48)

The distance between socioeconomic classes hinted at by Kliebard's allusion to labor and leisure actually can be made more pointed by the play on the Latin term *liber*. Used adjectivally, *liber(era, erum)* connoted being free; for example, free from work, from servitude. *Liber(eri)* can be a noun, one of whose meanings is "book" (Glare, 1982, pp. 1023-1024). Though it may look to be but a play on words, the handicap of the liberal arts tradition in a democratic society, and one with mass public education, is that it appears to have been the education of those few free to read or study because of being free of having to work. These individuals would be the future leaders, men whose education had been liberal. As Kliebard (1988) words the same thought, "The liberal arts curriculum had its origins in the belief that it was an education only for that aristocratic few who had the leisure it required" (p. 48). Nor was this but a curiosity out of a remote past with no consequence in our time. It remained alive, attractive, and a virulent enemy of all vocationalism. The late Robert M. Hutchins excoriated vocationalism in the name of

defending liberal education.[31] As Horace Morse (1952), then Dean of the General College, University of Minnesota, reported, Hutchins damned vocationalism for leading "to rurality and isolation; it debases the course of study and the staff. It deprives the university of the only excuse for its existence, which is to provide a haven where the search for truth may go on unhampered by utility or pressure for 'results'" (p. 362).

The pillorying of a liberal arts curriculum as elitist, aristocratic, and unsuited to a democratic conception of leadership, with its call for mass education, was repeated time and time again in an effort to explain why liberal arts education was out of favor. Perhaps it was best said in a memorable report published by a university, whose core college ranked high among those noted for teaching the liberal arts. The Harvard (1945) study, *General Education in a Free Society*, sought a "general" education to do for many what liberal education sought, but failed to do, for a few. The explanation for the failure was among the first, and most clear, to be published:

> The opposition to liberal education—both to the phrase and to the fact—stems largely from historical causes. The concept of liberal education first appeared in a slave-owning society, like that of Athens, in which the community was divided into freemen and slaves, rulers and subjects. While the slaves carried on the specialized occupations of menial work, the freemen were primarily concerned with the rights and duties of citizenship. The training of the former was purely vocational; but as the freemen were not only a ruling but also a leisure class, their education was exclusively in the liberal arts, without any utilitarian tinge. The freemen were trained in the reflective pursuit of the good life; their education was unspecialized as well as unvocational; its aim was to produce a rounded person with a full understanding of himself and of his place in society and in the cosmos. (p. 52)

Although these remarks may have been more true of Plato's vision of education in his model republic than it was of actual Athenian schooling, it does not matter. It was and is believed. More to the point for us is that a companion faith, dubbed general education, was substituted. The hope was that a general education could do for the many what liberal education was to do for the few, the potential leaders of society. Our task is not to learn what assessment, if any, has been made of what general education accomplished. What we have to report is that general education was not designed to be very different from the old

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[31] We shall not take up the criticism of the elementary and high school in the United States as shying away: "The Retreat from Learning in Our Public Schools" (Hutchins, 1953) has had many followers. An excellent bibliographical essay on the Bestor succession has been written by Russo (1988).

liberal education. *Prima facie*, vocational preparation seemed accepted by, if not into, general education, but the opposition to specifics and specialization should raise doubts. Dipping once again into the Harvard Report (1945), the welcoming of vocational education is plainly conditional:

> Modern democratic society clearly does not regard labor as odious or disgraceful; on the contrary, in this country at least, it regards leisure with suspicion and expects its "gentlemen" to engage in work. Thus we attach no odium to vocational instruction. Moreover, in so far as we surely reject the idea of freemen who are free in so far as they have slaves or subjects, we are apt strongly to deprecate the liberal education which went with the structure of the aristocratic ideal. Herein our society runs the risk of committing a serious fallacy. Democracy is the view that not only the few but that all are free, in that everyone governs his own life and shares in the responsibility for the management of the community. This being the case, it follows that all human beings stand in need of an ampler and rounded education. (p. 52)

The report goes on to summarize,

> To believe in the equality of human beings is to believe that the good life, and the education which trains the citizen for the good life, are equally the privilege of all. And these are the touchstones of the liberated man: first, is he free; that is to say, is he able to judge and plan for himself, so that he can truly govern himself? In order to do this, his must be a mind capable of self-criticism; he must lead that self-examined life which according to Socrates is alone worthy of a free man. Thus he will possess inner freedom as well as social freedom. Second, is he universal in his motives and sympathies? For the civilized man is a citizen of the entire universe; he has overcome provincialism, he is objective, and is a "spectator of all time and all existence." Surely these two are the very aims of democracy itself. (p. 53)

This is as noble an expression of the liberal aims in education as is to be found and yet it is no different from any that might have been written a century earlier. What had immediately preceded in acknowledgement of vocational education has made no difference at all. The paragraph is lecture and sermon combined and could not satisfy Kliebard's (1988) parting warning: "For liberal education to be successful in an era of mass public education, not simply the addition or substitution of subjects, but a massive reconstruction of what we mean by the arts, literature, history, political economy, and even science had to be accomplished" (p. 48). It is to the end of this remodeling that this essay moves. Lacking such a transformation, McConnell's (1952) words will prove a self-fulfilling prophecy: "Liberal studies—in the humanities and the sciences alike—easily fall prey to all sorts of

pedantries unless teachers strive earnestly to make them relevant to human needs and values, to bring them to bear on students' own problems and the crucial issues of their age" (p. 3).

Before leaving collegiate liberal and general education, a concern for specialization (or specificity) has won the right to be recognized for its bearing on the polarity of the academic liberal and general in contrast with the vocational continuum that reaches to professional preparation. Once again we turn to the Harvard Report (1945) and its contrast of general with "special" education:

> The term, general education, is somewhat vague and colorless; it does not mean some airy education in knowledge in general (if there be such knowledge), nor does it mean education for all in the sense of universal education. It is used to indicate that part of a student's whole education which looks first of all to his life as a responsible human being and citizen; while the term, special education, indicates that part which looks to the student's competence in some occupation. (p. 51)

Nothing in the foregoing quotation from the Harvard Report tags specialized education—very probably, in this instance, professional preparation—as of lesser stature than liberal (or general) education.[32] But, the report holds, the very specialized nature of professional preparation calls for a foundation of general/liberal education that will steep students in values and ideas that their culture has held in a sort of communion of the civilized—a contemporary *enkuklios paidiea*:

> We are living in an age of specialism, in which the avenue to success for the student often lies in his choice of a specialized career, whether as a chemist, or an engineer, or a doctor, or a specialist in some form of business or of manual or technical work. Each of these specialties makes an increasing demand on the time and on the interest of the student. Specialism is the means for advancement in our mobile social structure; yet we must envisage the fact that a society controlled wholly by specialists is not a wisely ordered society. We cannot, however, turn away from specialism. The problem is

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[32] The Harvard study does not treat a general and a liberal education as truly different: "Clearly, general education has somewhat the meaning of liberal education, except that, by applying to high school as well as to college, it envisages immensely greater numbers of students and thus escapes the invidium which, rightly or wrongly, attaches to liberal education in the minds of some people. But if one clings to the root meaning of liberal as that which befits or helps to make free men, then general and liberal education have identical goals. The one may be thought of as an earlier stage of the other, similar in nature but less advanced in degree" (p. 52). Our object in using this quotation simply is to show that the Harvard group did not think there was any profound distinction between the liberal and general in education. Whether there is "invidium" in holding apart vocational and general education in either the secondary or collegiate level of tutoring is another question and one that we think does indicate downgrading of the vocational or "specialized."

how to save general education and its values within a system where specialism is necessary. (p. 53)

The report continues with the observation that,

> The very prevalence and power of the demand for special training makes doubly clear the need for a concurrent, balancing force in general education. Specialism enhances the centrifugal force in society. The business of providing for the needs of society breeds a great diversity of special occupations; and a given specialist does not speak the language of the other specialists. In order to discharge his duties as a citizen adequately, a person must somehow be able to grasp the complexities of life as a whole. Even from the point of view of economic success, specialism has its peculiar limitations. Specializing in a vocation makes for inflexibility in a world of fluid possibilities. Business demands minds capable to adjusting themselves to varying situations and of managing complex human institutions. Given the pace of economic progress, techniques alter speedily; and even the work in which the student has been trained may no longer be useful when he is ready to earn a living or soon after. Our conclusion, then, is that the aim of education should be to prepare an individual to become an expert both in some particular vocation or art and in the general art of the free man and the citizen. Thus the two kinds of education once given separately to different social classes must be given together to all alike. (pp. 53-54)

The Harvard Report did not undertake to suggest how that was to be accomplished in pre-collegiate and university education; presumably general-liberal education is to command the undergraduate curriculum and the professional the graduate. While that arrangement has the advantage of conforming to the organizational form that has developed in American higher education, it had no ideas to offer on how either the vocational or general could be altered so as to recast the two and, in that reconstruction, bring them closer. What readers of *General Education in a Free Society* were left with was a fine sounding assurance that a well-developed general/liberal undergraduate education should be a persuasive preparation for civilized citizenship and flexibility of mind. And, to repeat, what happens prior to college admission is left unsaid.

There is another approach to specialization, what Tanner and Tanner (1980) say is "systematization and specialization of knowledge" (pp. 461-462). Put simply, this perspective recognizes the fact that specialties breed specialties; there is a proliferation of fields that brings a crowding of subjects into an already very full curriculum. Although the fact is not recognized, the American high school has resisted expansion; colleges and universities have not been as successful. At any rate, seeking a core of subjects, what

more and more often is called a general education, has been an almost universal practice. Nothing in education is more general than the quest for a general education.

GENERAL EDUCATION AND THE HIGH SCHOOL

Our preoccupation with general education is prompted by the belief that the future will see a stepped up call for curricular essentials, academic basics, which will be grouped under the label of general education. America will join the academic establishment of Europe in the decision that general education, including the mastery of such skills as have been memorialized as the three Rs, must dominate the elementary and secondary school. The college, whether or not limited to its first two years of "junior college," probably will share responsibility for general education, thus adding the ideal of the liberal (arts) with its definitely nonspecialized (i.e., nonvocational) quality. However dexterous the interpretation of "liberal," there is no contemporary interpretation that takes into account the economic facts of life, marketplace realities that we think belong in a realistic general education. This last is not self-evident; it will dominate the recommendations that bring this essay to an end, which is the reason for the present lack of explication.

Presuming that the college will continue to search for a general/ liberal experience in its undergraduate program, segregating professional (specialized) study in its graduate years, the gap between the general/liberal and vocational will persist. That fact has not been appreciated; the literature is silent, educational consciences having been lulled by the promise that the general/liberal has been attended to in the undergraduate college, if not in the rank-and-file of high schools. This state of affairs we find unsatisfactory. Higher education has not overcome its bifurcated general/liberal-professional/specialized education. Nor is there any sign that this will happen.

The prospect is somewhat more promising for the high school simply because the American high school is under review. *The Unfinished Agenda* published by the National Commission on Secondary Vocational Education (1986) proposes that both academic and vocational courses become "more permeable, more related" (p. 13). As illustration of how courses labelled academic can provide vocational preparation, the Commission proposes that,

> instruction in speaking and writing . . . is clearly vocational in nature for the prospective lawyer or teacher. At the same time, instruction in plant physiology or cell biology may be considered vocational for the prospective greenhouse operator or farmer. . . . The problems and possibilities in vocational education mirror those in academic education. . . . Students are seldom asked and seldom expected to integrate skills and knowledge across . . . courses. Opportunities for rote learning, applicative learning, problem solving, and creativity are inherent in academic and vocational courses alike. (p. 13)

Unfortunately, the tension between academic/general education and vocational/technical preparation remains. We write of this dualism as unfortunate not only because it results in a lower status for the vocational and technical, which handicaps those studies when they should be attractive to many, but also on intellectual grounds. In a word, the academic/general courses are the more anemic because they are deprived of considerations that are academic but usually omitted, even in the social studies, because they belong to the reality of employment, production, the national and international economy, and so much else that is the natural environment of the vocations. This can be spelled out and will be; at this juncture, the argument is limited to pointing to curricular reconstruction that is perfectly feasible and would make for a limited but promising reconstruction of both the academic/general and vocational/technical curriculums. This remodelling holds out a more winsome prospect than simply limiting oneself to increasing *conventional* academic demands. No one should question the importance of those conventional standards; highlighting the term "conventional" was not meant to imply that the information in mathematics, history, literature, languages, and in other subjects is unimportant. In the words of the Harvard Report (1945),

> information is inert knowledge. Yet, given this limitation, such an approach [in this instance learning something of the physical sciences] has its merits because it directs the student's attention to the useful truth that man must familiarize himself with the environment in which nature has placed him if he is to proceed realistically with the task of achieving the good life. (p. 59)

The inertness of so much curricular information is both regrettable and unnecessary. It is this that asked for attention in reading the first paragraph of a history of vocational education in Florida:

> The title of this book, *Educating Hand and Mind*, is intended to draw attention to an underlying conflict in education. Questions about the value of vocational training continue to surface as reformers debate which kind of education is of greater worth. In fact, the tension between educating hand and mind recently surfaced in Kentucky, Tennessee, and Florida in

> legislation suggesting that the pendulum is again swinging in favor of academic education in the high schools. What has been unfortunate is that educators and critics tend to look for answers in either-or-terms—either educate the mind and prepare students for college or educate the hand and prepare them for employment. Yet it seems clear that the production of goods and services in a technologically oriented society cannot be done effectively unless workers are competent both manually and intellectually. (Stakenas, Mock, & Eaddy, 1984, p. ix)

Stakenas and his colleagues are not alone in perceiving that the contemporary reform of the curriculum in the United States squeezes vocational preparation in favor of strengthening the academic. The National Commission on Secondary Vocational Education (1986), of which Harry Silberman was chairman, wrote in a similar vein, somewhat more recently, and with an added twist:

> Recent criticisms of our secondary schools have documented growing deficiencies in the academic preparation of students. Many states have responded to these criticisms by increasing the number of academic courses required for high school graduation. The assumption is that more academics, which may be the best preparation for college, is also the best preparation for life. The assumption is wrong. (p. 25)

It followed logically in the curricular recommendations of the National Commission that, "States should not mandate curricular requirements that restrict students' opportunities to participate in vocational education experiences" (p. 11). At a later point in this essay, we will note the recommendation of the Commission for the cross-listing of courses as a way of reducing the pressure for minimizing vocational instruction (Silberman, 1988, p. 39).

Attention now is called to three different goals for the American high school: (1) a general education in values and knowledge that is to be held in common, (2) an increased attention to academic knowledge and skills, and (3) vocational/technical competence. Such a troika can overwhelm the curriculum unless a way can be found to keep these three in tandem. That indeed is possible, at least for (2) and (3). Here the key phrase is "a technologically oriented society." It is nearly an educational clichè to say that mathematics and, at a scientific minimum, the physical, biological and earth sciences, if not the social sciences, are indispensable for technological success. This harmonization readily extends to make room for the technical portion of the vocational/technical. The simplest of the skills has a harder time winning an honored place in the curriculum; the vocational future of many who will not be technicians, will not attend the equivalent of Area Vocational-Technical Institutes is baffling. The more vexing challenge lies in meeting the needs of

many who come from our inner-cities, who are disadvantaged members of minorities, and others who bring heavy environmental burdens to school.

Equity is involved and equity is no small matter in a country whose Constitution includes the Fourteenth "equal protection" amendment. *The Unfinished Agenda* (National Commission, 1986) asks that we recall that it was not many years ago, in 1984 in fact, that the Vocational Education Act of 1963 was amended to emphasize "equity in vocational education—providing relevant training for the disadvantaged, reducing sex stereotypes by enrolling students in nontraditional programs, and serving 'special' populations more efficiently" (1988, p. 11). The handicapped and students whose command of English is severely limited all too often "are found in entry-level programs or general work experience classes, and few have access to advanced classes or cooperative vocational education programs" (p. 11).[33]

Before continuing with modernizing general education for the high school, we might remember our affirmation and reaffirmation of the ideal, adapting to individual differences. It was not so very long ago that the Educational Policies Commission (1944) was author of *Education for ALL American Youth.* Turning once more to the search for a core curriculum, for the common values and knowledge that are the nub of general education in the American high school, we read that the first of the study's "basic assumptions" states that schools "should be dedicated to the proposition that every youth in these United States—regardless of sex, economic status, geographic location, or race—should experience a broad and balanced education which will . . . equip him to enter an occupation suited to his abilities and offering reasonable opportunity for personal growth and social usefulness" (p. 21).[34] The statement might have added with regret that approximately twenty-eight percent of students drop out of high school (The National Commission, 1986). Four other assumptions were itemized. Each was an objective more than an assumption, but none were as specific and challenging as this first.[35]

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[33] The report adds to the examples of inequity in sex-linked enrollment patterns, disparities in the quality of vocational programs between inner-city or less wealthy rural schools, and affluent suburban high schools.

[34] Lenin's words on polytechnical education suggest an ideological agreement between his educational philosophy and that of *Education for ALL American Youth.* In Lenin's (1962) words, "The Constitution of the Russian Democratic Republic must protect . . . free and compulsory general and polytechnical . . . education for all children of both genders to 16 years (and maintain) a close connection between instruction and children's social production sector labor" (p. 155).

[35] The other four began with the assumption that the high school was "(2) [to] prepare him to assume the full responsibilities of American citizenship; (3) [to] give him a fair chance to exercise his right to pursuit

The fact that the challenge implicit in this first of the basic assumptions in *Education for ALL American Youth* has been neglected in favor of rhetoric about general and academic education is not a valid index of its significance. We cannot dodge it, nor do we have to if, and only if, we alter our vision of general/academic education. First of all, we must see what even the most up-to-the-mark general/academic curriculum lacks. Consider the eighty-seventh yearbook of the National Society for the Study of Education (Westbury & Purves, 1988), which bears the academic title, *Cultural Literacy and the Idea of General Education*. The Society's 1932 and 1939 yearbooks had preceded; they too reflected on that hardy educational perennial, general education. But the essence of general education was Protean; it altered in what was to be contained, a shift in course or tack bespeaking uncertainty, if not faddish thinking. Purves's (1988) statement of meaning is straightforward and familiar: "General education might best be defined as the purposeful attempt to provide a particular group of students with a common core of knowledge, skills, and values" (p. 1). Or, to write more poetically: "To be a member of a culture, one must possess a fair amount of knowledge, some of it tacit, concerning the culture: its rules, its rituals, its mores, its heroes, gods and demigods" (p. 3). This obeisance to cultural literacy, most compelling in Hirsch's "Cultural Literacy: What Every American Needs to Know" (1987), need not be diminished but is to be understood as one, admittedly important, element of secondary school education, all of whose parts are to be treated with equal seriousness. That is, cultural literacy, scientific studies, academic concentration across the boards, *first of all* is "other than" and not "better than" vocational-technical-professional preparation.

"First of all" has been highlighted to make the point that even reaching "equality of esteem" is not enough. The conclusion of this essay asserts that there must be an interaction between the two cultures, the literary humanities and the sciences (Snow, 1959). Unless this interaction takes place, the two cultures will keep their distance; polytechnical education will be a more attractive alternative.

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of happiness; (4) [to] stimulate intellectual curiosity, engender satisfaction in intellectual achievement, and cultivate the ability to think rationally and (5) [to] help him to develop an appreciation of the ethical values which should undergird all life in a democratic society" (p. 21). Unlike Spencer's characterization of "What Knowledge Is of Most Worth? it was most difficult to operationalize these statements so that a teacher might have a good chance of knowing what would be appropriate to do.

Some Attempts at Restructuring General Education in the High School

This subsection will be brief, which does not reflect the labor evidenced by the seemingly endless proposals for reordering general education in the high school (see Tanner & Tanner, 1980; Roberts & Cawelti, 1984). In no one of the major proposals for curricular modification has there been a plan that truly recognized the social environment while easing the academic distance between vocational and nonvocational preparation.

The first hurdle was the familiar one of placement: Was general education at home in the high school or college? *The Journal of General Education*, whose first number appeared in October 1946, took it for granted that general education was a challenge to American colleges.[36] The provocation for this attention was the spectacular growth in specialization with an attendant fear familiar to us. The high school had become involved only when questions were raised about the dominance in the high school of preparation for college and, in the short range, college admission. As Tanner and Tanner (1980) reflected on the fate of general education in the high school, they thought the twentieth century had witnessed a struggle "to develop its own authentic curriculum in general education":

> On the one hand, there are those college educators who have chosen to see the secondary-school curriculum as concentrated on facts and skills to "tool-up" pupils for college. Then there are those college educators who have sought to see the secondary-school curriculum as properly being limited to the academic disciplines that correspond to the liberal arts studies of the college. (p. 446) [37]

The comprehensive high school became the norm. It was a "unitary, multipurpose school"

> that was designed to provide (1) a general education for all youth as citizens of a democratic society, (2) specialized programs for vocational proficiency for those youngsters planning to enter the world of work after high school, (3) the specialized program of academic preparation for college, (4) exploratory studies and experiences to enable adolescents to investigate new sources of learning, and (5) enrichment studies and experiences to meet individual interests and to widen and deepen the sources of learning for all adolescents. (p. 447)

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[36] As has been noted, the first editor of *The Journal of General Education* was Earl J. McGrath, the Dean of the College of Liberal Arts, State University of Iowa. A spate of essays on collegiate general education began to be published and by 1955 Dressel and Mayhew's "A Selected Bibliography on General Education" appeared in the journal.

[37] The Tanners cite Bestor (1955) as an example of an educator who holds that the high school curriculum should correspond to the liberal arts.

The comprehensive high school curriculum appeared to accommodate at least some needs, but it did not accomplish the essential task of creating a parity of esteem between curriculums. Vocational education remained at the bottom; the college-preparatory curriculum remained on top. This distance has been lamented time and time again, but nothing has been accomplished to alleviate the unhappy dualism nor to rescue a "general" curriculum from meaninglessness. If a resolution is possible, and the last section of this essay will pose one, it will not be the attainment of academic respectability by the technical portion of vocational studies. That is, the obvious need that much technical proficiency has for mathematics, science, and verbal literacy does not affect other vocational preparation, which remains of low status. To be successful in moving toward equality of esteem, there must be changes in our courses of study that allow the academic and nonacademic programs genuinely to interact. That is the goal towards which this essay moves.

It has not been the direction of movement in the curricular reforms that have marched across the educational stage since the end of the second World War, however.[38] Disheartening as that may be, there is promise in the very fact that the hunt for a general

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[38] The general education objective and these curricular reforms have been meticulously reviewed in "General Education and the Search for Synthesis" (Tanner & Tanner, 1980). We cannot do better than to quote at length from the summary the Tanners have written:

> "Notable efforts were made in school and college during the twentieth century to devise new curriculum structures so as to provide for a greater measure of relationship and synthesis among areas of knowledge. The traditional subject curriculum was reorganized variously in terms of (1) disciplinarity, (2) correlation, (3) fusion, and (4) broad fields. Whereas the disciplinary approach rejected the traditional conception of subject matter as something given or fixed, it nevertheless conceived of knowledge as belonging to and developing from the specialized domains of university scholarship. This specialized outlook on knowledge was not well suited to the task of general education. . . . Other modes of organizing knowledge (correlation, fusion, and broad fields) were designed to build greater relationships between and among the organized studies within the framework of the subject curriculum. But the subject curriculum, nevertheless, called for a logical organization of studies with limited relevance to the life problems and life experience of the learner. In response to this need, progressive educators sought a new curriculum synthesis. The result was the core curriculum as an alternative to the traditional subject curriculum. In the core approach, subject-matter boundaries were largely dissolved as the curriculum was organized according to pervading problems of personal and social significance. Unlike the disciplinary approach, which treated each knowledge domain as following a distinct mode of inquiry, the core approach was based on the premise that inquiry into pervading problems of personal-social significance requires not only a unity of knowledge but a unified mode of inquiry or method of intelligence shared by all enlightened citizens of a free society. But the growing specialization of knowledge, the increasing fragmentation of society, the inertia of educational tradition, the dearth of appropriate curriculum materials, and the opposition to the treatment of controversial problems—all served to prevent the core idea from gaining general acceptance" (p. 511).

education has remained as vital for the high school as it has been for the college. Justification for such optimism lies close to the undisputed fact that Americans have refused to accept that dividing a high school curriculum into a college preparatory track, a vocational track, and other programs cannot be overcome by general education, plus open enrollment in such activities as arts, sports, and all that clusters in the co-curricular and in which a student can participate without reference to her or his post-high school plans. Education for *all* American youth remains a viable part of our cultural credo.

The argument being made does not lead to a rejection of the general education ideal. Far from it. The end sought by proponents is shared by us. Sturdy steps have been taken, but, sound as they are, we think that they fall short even of what now can be hoped for by proponents of polytechnical education. Consider but one of the very fine statements on the science curriculum in the United States. Writing of Project 2061 of the American Association for Science, Rutherford and Ahlgren (1988) call attention to groups of questions basic to the study. Three of these have to do with scope, emphasis, and selection criteria. We cite these three because they illustrate the forward looking steps taken by Project 2061, which, despite its enterprise, falls short of what can be done in the name of general education:

> *Strategy*. How can the science curriculum for all students be specified in a way that will encourage building it from the ground up, rather than by a series of dilutions of university science? How can curriculum guidelines capture the importance of *how* science is taught as well as *what* science is taught? How can any new specification for science education avoid becoming simply a new set of headings under which all of the old content is reshuffled? What can be done to keep a new conception of the content of school science from just giving rise to a new list of items to be memorized? (p. 76)

These rhetorical questions promise a more engaging science course of study. What is said under the heading of "scope" is no less commendable:

> *Scope*. Which sciences should "school science" comprise? Is mathematics a part of science? What about the social and behavioral sciences, the computer and informational sciences, or technology? Should the applied sciences—such as medicine, engineering, and agriculture—be included? What overlap, if any, should the science curriculum have with history, literature, and the arts and crafts? (p. 76)

What next is said falls under the heading of "selection criteria" and is no less provocative than what preceded:

> *Selection Criteria.* What educational purposes should be used to guide the selection of the content of school science? The needs of citizens? The needs of the country? Preparation for work? Preparation for other courses, or for college admission? To improve student performance on science examinations? Should material be included because of its historical and cultural significance, even if of little practical use? What about the enrichment of childhood as a criterion? Are there exclusion principles that can be used to justify the deliberate omission of some content from the science curriculum? (p. 77)

These three sections have been quoted in full because they bespeak curricular realism, but do they go far enough? Each is elaborated in the Rutherford-Ahlgren (1988) article and our question is answered when the three sets of questions are elaborated. Again, it would be difficult to fault the first principle under "strategies," the principle that is summarized in a sentence: "To build an effective science curriculum, it is first necessary to identify what students should end up knowing" (p. 77). That is, "It will recommend what people should understand by the time they are 17 or 18, the residue of knowledge and skills that we would like them to carry through life and repeatedly build upon and refresh" (p. 78). The principle is illustrated from the social and behavioral science call for students to gain an understanding of categories and "the concept of emergent systems in increasingly complex systems" (p. 78). The first principle assures us. The thinking is functional in its stress and imaginative in its illustration. That originality, the lack of conventionality, is not illustrated by the statements of the second principle: "The learning goals for particular student populations (*vocational*, *college preparatory*, *general*) and for students of different interests and abilities, should build on those set for all students" (p. 79, our emphasis). We do not question the desire for science to contribute to secondary school general education, but we do question the lack of challenge to the conventional organizational cataloguing of vocational, college preparatory, and general education. One can agree with Rutherford and Ahlgren that a general education should prompt one to "become aware of the nature, extent, and value of biological diversity" (p. 79). The generalizations of the science curriculum approved by the authors do suggest "the kind of understanding all students should have of biological classification" (p. 79). But what comes along with that old classification into watertight curricular compartments? Diversity will have been studied, but this organization of school tracks denies the *interaction* that characterizes everyday life. For example, the role of women in our culture and subcultures can be

illustrated by literature and others of the arts, a variety of episodes in the history of science and technology, or disparity in income, to name but a few areas that span the curriculum. There are a variety of roles attached to the career pattern of the woman, who can be thought of in terms of home and family, employment, disparity in wage and salary, and on and on. Neither the vocational nor any other curriculum has a monopoly on the topic "women in society." Exploring this seminal issue would reduce the curricular barriers and move secondary education in the direction of a type of general education that identifies more with the individual and group within environments, social and physical, rather than general education whose chief characteristic is being interdisciplinary.

So with much else that does not belong to any one of the trinity into which the academy has organized curricular tracks. This is a point to which we will return more than once; it is a concept that belongs to the revision of the curriculum to which Project 2061 is making a singular contribution, a contribution limited by the objective of general education being circumscribed by contributions of mathematics and the several sciences to a general education in science. These contributions are fully representative of what is envisaged for the general science curriculum and its applications (Rutherford & Ahlgren, 1988, p. 83).

GENERAL EDUCATION AND MERITOCRACY

The possibility of a meritocratic society emerging must be taken up, however cavalierly, prior to asking whether general education can be reinterpreted once again. This time it would be for the purpose, not of overcoming specialization, but of winning greater realism in study *along with* lessening the inequality of esteem (Young, 1958). Revisionist thought has been recognized and the possibility of ours being a meritocratic society, education included, is the complement of revisionist and neo-Marxist views. As with revisionism and neo-Marxism there is no lack of relevant literature illuminating the meritocratic claim. A powerful study is that of Wilensky (1975), which complements the well-known study of Jencks et al. (1972) on inequality. Wilensky's conclusion is that "modern education systems remain overwhelmingly meritocratric and vocational" (p. 3). Wilensky extends the indictment by adding,

> They admit new masses of students, but at the same time, rather than dropping standards in establishing curricula, they develop new hierarchies and new specialties—limited arenas of competition at every academic level, which in the end feed appropriate levels of the occupational structure; they diversify to accommodate the immensely varied genetic and cultural advantages and disadvantages of the individuals they process. They loosen up requirements or abolish traditional grading practices . . . but new incentives emerge, and the general emphasis on occupationally relevant performance or work habits remains. (pp. 3-4)

Although Wilensky is addressing higher education, especially that in California, much of his criticism can be transferred to the American high school. The criticism is wholly negative, even more so than that of Jencks or Trow (1972), both of whom he rebukes.[39] The brunt of Wilensky's critique is that education has functioned to "sort" students (Spring, 1976). Whether or not he, Spring, and others have made their case is not now in dispute. Successful in argument or not, Wilensky and his colleagues have left the suggestion that education is illiberal because it is vocational in objective. That their objective has been to characterize the control of education as one by commercial interests, is beside the question. The assumption that a revolution in the distribution of power and wealth is in order if equality of product as well as of opportunity are to be achieved is no more. The point for this discussion is that even such a critic of the status quo as

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[39] "Why," he asks, "sociologists (Jencks et al., 1972) should be surprised that the move from elite to mass to universal education (Trow, 1972) fails to effect by itself a major redistribution of income or a revolution in equality is a mystery, considering the tight connection between education and the occupational structure and the basic sorting and socializing functions of education" (Wilensky, 1975, p. 4).

Wilensky—and there are others—has not helped to uncover truly educational possibilities in the vocational arena. Not even the topic of unionization, the many questions that can be raised about the marketplace (including career counseling and the high-school or college-job transition), have led these critics to see the potential of vocational preparation for general education. Again, this is a challenge to which we will return.

Before leaving the idea of meritocracy, we must admit to a possible meritocratic distinction in the continuum of vocational preparation. We have championed the notion that vocational preparation is a continuum reaching from the less demanding programs through technical to professional study at the graduate school level of preparation leading to the doctoral degree. This we did consciously, believing all segments of vocational preparation were vocational. But a charge, or perhaps, two charges, can be made against this claim of the vocational continuum. One is that professional specialization both is severely restricted in terms of prior academic accomplishment and follows the collegiate experience in general/liberal education. The preparation of technicians also can be separated by the claim that many technical programs require coursework in mathematics and other sciences, as well as some proficiency in at least reading and writing (see Bensen, 1988; Walker, 1985). In a word, the vocational continuum is held to be a myth.

The discussion cannot be slighted. That there are distinguishing characteristics of types of vocational preparation is obvious. Some types are quite demanding; wages, salaries, and fees reflect that fact. But that is not the point. Nor is it pertinent to say that there has been a diminution in demand for those types of manpower economists call semi-skilled or even for certain skilled craftsmen. The history of technology, together with economic history, explains what has happened and why. This same history is the history of vocations. The history, social dynamics, and economic and political character of the marketplace spotlight forces that are dramatically clear when seen in terms of issues that are at home, or should be, in that portion of the curriculum allotted to vocational preparation. As we shall say again, insistently, this can and should be thought of as essential for adequate general education.

When Walker (1985) responded to a rhetorical question about the meaning of the stunning developments in modern science and technology, he moved beyond the opinion that the curriculum, whether precollegiate or in higher education, had to make room for

science and technology and acknowledge that the information available not only increased at a great rate, but continuously ran to subspecialities:

> The various branches of knowledge are . . . being transformed. Scientific knowledge continues to explode at ever-increasing rates and, as it does, new relationships among phenomena turn up that blur and redraw the boundaries among disciplines: we learn that cosmology bears a close relationship to the high-energy physics of sub-atomic particles; physiology turns out to depend on molecular biochemistry, and genetics fits in there somewhere, too. The theory of information turns out to be applicable in genetics and psychobiology as well as in electrical engineering, and so on. As new disciplines become central in contemporary scholarly and scientific life, old foundation knowledge proves inadequate, and new foundations must be erected.[40] The mathematics of continua which pervade our algebra, trigonometry, and geometry courses in the secondary school do not serve as well as foundations for the modern mathematical sciences as do topics in discrete mathematics—sets, probability, logic. (p. 93)[41]

It is at this point that Walker (1985) writes that "historians are rewriting history to take account of the influences of technology on past civilizations. And new skills become relevant too—computer programming, keyboarding, word processing, data analysis" (p. 93). There is no need to lengthen the list; the idea now is old-hat. What forces itself on contemporary conscience is whether this quickening tempo has evolved a sophistication that brings with it meritocratic educational policy as well as an unbridgeable chasm between trades (blue collar) and technology (white collar) (Bensen, 1988), to say nothing of professional specialization. Quite evidently, the vocational continuum which we insisted on may be no more than a bit of wishful thinking.

Walker (1985) takes a position in favor of meritocracy and skillfully defends it. His thrust is made in two brief paragraphs:

> The cognitive demands of formal subjects like science and mathematics are high and severe. Mistakes are not matters of taste and are difficult to hide. The work cannot be made arbitrarily easy because in the end the complexity and subtlety of nature determined the difficulty of science and who knows

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[40] There is a far greater degree of preservation in the literary humanities. One can expect to find, and does find, much less change and obsolescence in the traditional liberal arts, which leads its proponents to say that the liberal arts have more to do with what is really real and not changing, as is the character of the more Protean technology. Here is a conflict of ideas which is of interest, but must be sacrificed in this essay.

[41] Later in the essay, Walker returns to the subject of mathematics and then writes, "Those topics in mathematics that are most central to current applications—statistics, discrete mathematics, logic, and so forth—should become increasingly important. It is interesting to contrast Walker's reflections with those of Shvartsburd described earlier with reference to his "On the Polytechnical Orientation of Mathematics Instruction at the Secondary School Level (1975).

> what determines the difficulty of mathematics. As a result, it is unlikely that every student will learn with the pace and facility required for success in advanced scientific and technical study. And, while we need virtually universal opportunity, we should not expect equality of results.
>
> Thus, scientific, mathematics, and technical studies will continue to be competitive and meritocratic, and therefore at odds with our democratic and egalitarian ideals. On the other hand, if schools do not provide an opportunity for the pursuit of excellence in scientific and technical studies, then either the society will suffer the consequences of an inadequate pool of developed talent in this critical area or concerned individuals will find other ways to provide the necessary preparation outside school. Schools will need to cope with this tension between excellence and equality. (pp. 94-95)

Our response to Walker's claim will stop well short of adequacy. But something needs to be said. This meritocratic claim reenforces the belief that vocational preparation for other than professional and technical skills is suited to the abilities of "academically unpromising" students. No one is at a loss for understanding what "academically unpromising" means. The categorization is unnecessary. There will be young people who do not wish to continue their schooling beyond high school. If there are jobs for which specific preparation is highly useful prior to graduation, or part-time while on the job, that preparation should be available and without stigma.[42]

Schools must have career counseling available, which lays out the choices of courses and what is demanded for success in those courses. Of course, it is singularly difficult to predict manpower needs or opportunities. How difficult it is was made manifest when the Association for Supervision and Curriculum Development underwrote an elaborate project aimed at shedding light on the character that might be had by an up-to-date general education. In the second paragraph of the study that resulted, Roberts and Cawelti (1984) admit to the difficulty, one that plagues career counseling:

> Today, concerns about ill-prepared high school graduates are being expressed by employers as well as university faculty members, who are increasingly required to provide remedial instruction in composition and reading skills. There is also uncertainty about major changes in life styles and in the work world, where people are likely to see significant alterations in employment patterns. Some forecasters, such as Marvin Cetron (1982), anticipate a "hightech" future resulting in several hundred thousand jobs in such areas as robotry repair, laser technology, computer programming, and geriatrics. This forecast, however, contrasts sharply with Bureau of Labor

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[42] The challenge to those charged with forming curriculum policy was ably discussed some years ago by Broudy, Smith, and Burnett (1964).

> Statistics data (1983) showing that most future jobs will be nontechnical—salesclerks, cashiers, secretaries, waiters, and janitors. Indeed the Bureau predicts that by 1990 new technical jobs will account for only 8 percent of the total new job growth. (p. 1)

What makes for skillful career counseling is not for us to say. Our object is limited to a desire that vocational preparation not be needlessly handicapped. Meritocratic discrimination has no place when guidance and good teaching, teaching that helps students to achieve rather than discouraging them, are what is needed. This is not sentimentalism. Why should we bear with the familiar curricular tracks that Westbury (1988) describes:

> The "college preparatory" and "general" (and minimal) curricula . . . are heavily laden with social, intellectual, and cultural symbolism and, as such, become the bases not only of intellectual and scholastic differentiation, but also of cultural differentiation. However, while this is very clear on the ground and widely recognized, in practice it is mystified ideologically. (p. 183)

Rather than attempting to sort students, an effort that is as old in Western educational thought as Plato's sorting in *The Republic* (II, 428-445 A)—and no more sound—it would be sensible to undertake a historical review of social changes, together with relevant scientific, technological, and economic developments, that bear on vocational preparation. Why is it that manual training gave way to industrial arts (or the traditional wood, metal, and drawing content of industrial arts) and why has that been superseded by technology education? Incidentally, technology education has been defined as "a comprehensive, action-based educational program concerned with industry, its organization, personnel systems, techniques, resources and products, and their social and cultural impact" (International Technology Educational Association, 1986). The phrase, technology education, was only coined some fifty years ago, a fact inviting awareness of how recently the vigorous unfolding of a technological economy affected the thinking of a portion of the educational profession.

And we are reacting to a portion, no more. It is regrettable that home economics and so much else in the vocational preparation programs at the high school level are passed over in this essay. The excuse is that our attention is circumscribed by the implication of polytechnical education for vocational preparation and general education. Polytechnical education has yet to push to the variety that is included by realistic vocational preparation. In this variety lies a way of comprehending vocational preparation, a fashion that

appreciates what vocational preparation can do for general education. But that must be the subject for another report. Now our interest is limited, but not to the degree that we fail to appreciate how society and the disciplines drawn on by general education have been transformed by technology. Again we borrow from Walker (1985):

> The houses we live in, the jobs we hold, our patterns of social relationship, our life-styles, our institutions (families, businesses, courts, legislatures, churches) are being transformed by developments in transportation, manufacturing, communication, medicine, and agriculture. Think of the new . . . patterns that have emerged in just the last quarter-century: . . . multi-national corporations, franchising, the failures of government regulation leading to the restructuring of the post office, the telephone system, and the banking system; the decline of traditional industries and the growth of automation, electronics, biotechnology, space technology, burgeoning employment in service industries; internationalization of commodities markets and financial dealings; the industrialization of farming; processed food; manufactured housing. (p. 92)

Given at least these innovations, and they but sample a larger universe, would it be amiss to look at vocational preparation for the thin-end of the wedge asking for curricular change? Does not this surge in technology underwrite an embrace of "learning to learn" in a world whose pace is quickened by scientific discovery and technical adaptations? Can we disagree with Walker (1985) when he concludes that "we should expect continued widespread interest in cultivating powers of discovery, invention, and research—the so-called higher-order cognitive skills" (p. 96)? Has this nothing to say about the method of teaching, of motivating for example, simply because we have concentrated our attention on the curriculum in general and the contribution that vocational preparation might make being that it is so sensitive to science and technology, as well as to their impact on society?

IS CURRICULAR FUSION POSSIBLE?

The Status Quo

As is evident, the effort to achieve a persuasive curricular program in general education chiefly has been a search for values and information that are needed to have the modern equivalent of the Greek *enkuklios paideia*. The explosion in information and knowledge, if not in wisdom, has threatened to overwhelm the identification of nuggets. We may not be dismayed by the gloomy reflections of Holmes (1988), whom we remember writing of our "Fortress Monastery." Holmes professes to see us hamstrung by a variety of myths, the most prevalent of which Holmes terms the "technocratic myth" (pp. 248-249). To Holmes, the "technocratic myth is that school prepares and trains the young for mature functioning in adult life. Every individual should contribute to the larger society and material returns will flow in recognition of that contribution. The school's job is to help every individual find a useful, satisfying place within that larger society" (pp. 248-249).

We find nothing wrong with those expectations per se; it is the failure to confront the things that defeat those expectations that defeats us. We are diverted by the belief that a core of values and information will be enough. It cannot be simply because so many of the public's problems lie in the social environment. One part of that environment, the workplace, has been ignored, an indifference whose mischievousness has been compounded by a meritocratic indifference to less than technical and professional skills. What we have settled for has been a simple, sometimes artful, rearrangement of subjects whose contents have been socially sterilized of controversial subjects which salt textbooks and classroom discussion. Polytechnical education, even if more true to its written formulisation than actual life in school and workplace, at least tries to harmonize the academic and everyday, the theoretical with the practical, individual abilities—when and if well assessed—and the needs of society, however the latter are determined.

The curricular mixes served up with a routine change in labels (some of which we have passed in review, others of which are listed by Westbury [1988]) have been something less than satisfactory despite the talent of those responsible for them. Nor have the European academic secondary schools been outstandingly successful despite their "'carefully mapped out curriculum' of history, geography, literature, mathematics, science,

and foreign languages" (Westbury, 1988, p. 172). If success for a curriculum is to be determined by passing the *Abitur*, or another of the European examinations that follow completion of the secondary school, then the schools that prepare for those examinations may be thought a success. To be sure, the high rate of failure on the examinations will be considered "wastage" by some, but others are satisfied that failure shows that standards are high. But these academic schools are not successes if graduation and success with the end-examinations are taken to suggest knowledge of, and willingness to be engaged in, the resolution of problems boiling in the social environment. The thrust of this essay is that many of these problems, these issues and challenges, are associated with the marketplace—an off-hand way of referring to the confluence and interaction of economic, political, and social matters. If this claim holds water, we can move one additional step. That step asks those involved with the secondary school curriculum to consider whether vocational preparation cannot be seen as fruitful for finding some of what is to be studied? If we can persuade to this end, the esteem, the status, and prestige of vocational preparation will rise to something like that now enjoyed by academic studies (Bottoms, 1988).[43]

This is not a zero-sum game. The increase of status for vocational study, even of that study which does not enjoy the title of technical or professional, does not detract from the need for academic study or from the exercise of cooperation, teamwork, and all that has been demonstrated to be of moment in life. And we will not be engaged in the endless games that are the rearrangement of the curriculum as named by Tanner and Tanner (1980). At the moment, our national requirements are for few subjects,[44] with Illinois' requirements indicative of subjects included:

> The state's current (1987) requirements include only three years of English with an emphasis on reading and writing skills, one course in American history or American history and government, one semester of health education, thirty clock hours of instruction in driver education, and eight semester courses in physical education, together with classes which might be incorporated into several courses to constitute the equivalent of one quarter of coursework in consumer education. In addition the state imposes

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[43] Bottoms presents data that establishes the fact that high school students enrolled in programs designed for vocational preparation take less demanding, lower-level academic courses, for example, courses in general science. Many of these high schools have two tracks: one for students preparing for college and the other a "general" track. Least promising of all, vocational education all too often is viewed as training rather than learning.

[44] Westbury (1988) concludes from his survey of state requirements "that all of the states impose on their schools: typically three or four courses in English and language arts, two or three courses in social studies, two courses in mathematics, one to three courses in science and one course in physical education plus a group of other miscellaneous requirements in which there is no clear consensus" (pp. 175-176).

> a set of unspecified and unsanctioned expectations that the schools should teach patriotism, career education, sex and family life education, conservation education, honesty, justice, kindness, moral courage, the humane treatment of animals, and metric education. (p. 176)

These are minimal requirements and Westbury (1988) admits that students must have more than the minimum to graduate. Yet little mathematics and science—physical, biological, or earth science—is studied, few credits in the arts are elected and art, music included,[46] probably will not be mandated in any state. This curricular pattern has lasted through time. Westbury illustrates his claim that

> The curriculum of the high school has remained largely unchanged for almost eighty years. As a consequence the changing definitions of "culture" that have come to pass over those years have largely passed the school by, and where they have affected the school, they have done so in ways that reduced, not enhanced, the contribution the school might make to the ultimate participation of the adults in that culture. (p. 181)

What we are seeking in this essay is one tack to take in strengthening the high school curriculum. The academic course of study can hope to become more sturdy and there is every likelihood that there will be a heartening concern for continued attention to human relations, communication, and such social issues as care for the environment, "pluralism, sexism, and peaceful use of nuclear power" (Roberts & Cawelti, 1984, p. 11). In our opinion, it is a gain when such a school as Pinellas Park High School in Largo, Florida, makes room in the curriculum for "an understanding of the effects of ethnic plurality within our culture" (p. 143). There are other indications that here and there high school students are face to face with the social environment, for example, the expectation that instruction will help with "an understanding of the major parties and groups within the United States that exert political power" (p. 144).

But there is all too little agreement on what in the social environment should be studied. Consensus is unlikely to occur through the addition of new courses. The academic course of study needs strengthening by revising the courses now offered and adding additional requirements. At any rate, we do not wish to be thought of as advocating a dilution of academic studies because we feel that meritocratic formulations, together with

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[46] Without singling music unfairly, Westbury (1988) does remind us that "nationwide one of every four adult Americans plays a musical instrument and secures . . . pleasure in their playing that could only be enhanced by formal experience in school" (p. 180).

a denigration of vocational education, have proved mischievous. We think that the place to start is with reflection on what Soviets seek in the name of polytechnical education.

The Soviet educational objectives are clear. The aims may not be realized, but their statement is unambiguous and bold. First of all, Soviet young people are to be experienced in productive work. This vocational readiness is not to slight academic study, especially in mathematics and the sciences. Can we succeed in combining the academic and the vocational, in envisioning a general education that is nourished by these two cultures? If we can, one reward will be an increase in the availability of workers with a range of skills that are described by such words as technical and professional. For all its manifest importance, the outcome in terms of manpower is not something with which this paper is concerned. We will think about another bonus that is less tangible than the manpower enrichment of the economy.

Limiting our thought to the curriculum in this country, it is our hope that both academic and vocational studies can be strengthened by a revision of both—a revision that is characterized by an interaction between the two. Both will be altered, which is a step so radical that it would be well to see the movement as in two stages. The stage already is described in the recommendations for changes in the curriculum proposed in *The Unfinished Agenda* of the National Commission on Secondary Vocational Education (1986). It is a stage in which it would be well to concentrate on four moves: (1) recognizing the importance of vocational preparation, (2) insuring access to vocational preparation, (3) articulating the academic and vocational, and (4) exploiting field-based learning, including cooperative education. Polytechnical education has moved on each of these four, with only field-based and cooperative education being quite different. For the Soviet educator, field-based education means experience with production in whatever enterprise is relevant. For the educator in the United States, or in Canada, field-based and cooperative efforts are present in both the workplace and in community service (p. 13). Unlike the Soviet ventures, however, they may be unsupervised, unstructured, and unpaid. In the absence of data on outcomes when the situation is structured and supervised, if not paid, it is not possible to defend a preference, but we would express the opinion that there is much of field-based learning that is too cavalierly undertaken. The cooperative vocational programs, in contrast, always are jointly planned, structured, and supervised. A written agreement between the school, employer, and student "outlines the planned learning

experiences" (p. 22). It is not surprising that *The Unfinished Agenda* reports cooperative vocational education "one of the most successful aspects of vocational education" in the United States.[46]

Cooperative education assumes the independence of the contracting bodies, that is, a business and a school's program preparing for a career in marketing. Cooperation with industry, business, or some other enterprise assumes the same. That is, not an interactive model in which the elements truly are intermingled. Assuredly, not all of the course of study in a high school will be of this "fused" type; there is a place for specialization and the more advanced one's studies the more demanding are the specialties. The high school surely is not host to such a degree of specialization. Most students would profit from study whose character reflected the interaction of the real world. The elements of that world interact; they combine, sometimes even fuse, as does so much design when it becomes part of the car or chair. This is the paradigm now in mind as the course of study is approached.

The key to appreciating academic fusion lies in the environment. It is a social environment; even the physical world is subject to political demands and economic responses—the many ways in which the social world presents itself. A part of this social environment is the world of work and skills rarely thought of as properly academic. The continuum of the vocational, one that reaches even to the graduate school's programs of professional preparation, is but a part of formal education, but it is a vital part. Associated with this world of work are questions, issues, and skills the ignoring of which makes the school, if not the college and university, appear irrelevant to too many students. As motivation flags in the senior secondary school, the dropout rate reaches worrisome levels. The disproportionate numbers of minorities who are unemployed should dismay those concerned with human development and available manpower.[47] While all the foregoing bespeaks the importance of vocational preparation, our sole reason for mentioning it is, once again, to highlight the need for taking vocational preparation seriously.

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[46] There are many publications that describe effective programs in the field of cooperative vocational education. Among them are Wanat and Snell (1980) and Mason, Haines, and Furtado (1972). The most promising study on the research that has been written on cooperative vocational education is Leske and Persico (1984).

[47] Statistics dealing with education are abundant. This data will not be paraded here, but is available from such sources as the Digest of Education Statistics and The Condition of Education, published by the U.S. Department of Education, National Center for Education Statistics, Washington, DC.

That plea will not be made again, and is advanced now only because what we are about to say on the subject of curricular fusion is not to be thought a substitute for vocational preparation. There is no substitute; vocational preparation has to be taken seriously. That there are instructional jobs to be protected is beside the point. Either vocational preparation is needed or it is not. That is not what we have targeted. That we think vocational preparation belongs in education cannot now be doubted. Once we can feel that vocational preparation truly is accorded a legitimate role in education, we can feel able to move to what is our core intent. Our intention is to argue that "the vocational life" raises any number of questions, generates any number of issues that should be raised and studied as part of a sound general education. In brief, we believe that general education is the heart of an education or, more accurately, pre-professional study. It goes without saying that there well may be a role for some pre-professional academic specialization at the college or university. Fulfilling the promise of a general education does not entail a monopoly of the curricular schedule. Nor does it mean that courses will be watered down. Some surely will be changed, but the alteration should not bring a lowering of standards.

As we move to a few examples, it is in order to recall that we have been stimulated by what has been planned in the Soviet Union where polytechnical education is combined with guidance and practical experience. This essay responds to that challenge by admitting to the formidable gulf, the chasm, that exists in the United States between the status of academic study and all that is thought of as vocational. The proposal we are about to make is limited to the course of study, to remaking the subjects usually found in a high school. The proposal might seem radical, even farfetched, but it is not at all radical; and it may not be enough to counteract the profound disdain for vocationalism, professional study included, within the academic community. For example, departments or colleges of education often are looked down upon by faculty members of the collegiate liberal arts departments. Even within a college of education, departments offering study in vocational and technical preparation may have their academic credentials challenged. In the face of this academic hostility, a proposal that asks no more than a new look at the course of study is hardly radical.

In essence, the proposal is no more than a suggestion. We propose that the economy, with the workplace a palpable representation of the economy, be exploited for the reconstruction of courses. The hope is twofold. If successful, a new vitality will result. That would be one positive outcome. The other would be a better relationship

between the vocational and the so-called liberal. We have termed this latter possibility the reform of general education rather than writing of it as a new look in liberal education. That was intentional. A liberal education never has had a place for the vocational. It would be a most difficult task to insinuate such a rapprochement now. General education is another thing. The reformulation is much easier. Only ask the rhetorical question—how can an education be thought general, if it excludes so much that is central to our lives? That is the question that lies behind our modest, tentative curricular proposal. It is not equivalent to showing how vocational preparation can use liberal or academic studies, the three Rs for example, or more of a command of mathematics and modern foreign languages. There is no gainsaying that an economic world invaded by science and technology will ask that applicants for technical work know some science and mathematics, or become familiar with computers, and that more and more citizens feel reasonably at home in the "information age." No one will dispute how salutary it would be to have more high school courses cross-listed, so that students in courses that have more applied contents, applications of mathematics for example, could be credited with coursework that satisfies graduation requirements (Silberman, 1988, p. 39). We have urged more dialogue between teachers in preparatory programs of vocational instruction and other teachers. We at once echo and applaud the sentiments expressed in *The Unfinished Agenda* (National Commission, 1986):

> What is required . . . today are programs and experiences that bridge the gap between the so-called "academic" and "vocational" courses. The theoretical and empirical bases as well as the practical and applicative aspects of academic courses and vocational courses must be made explicit and meaningful. This calls for a joint effort between the academic teacher and vocational teacher. (p. 8)

All that is taken for granted. Our desire is for something that is somewhat less obvious. The assumption of that less obvious goal is that our general education can become more helpful for understanding and managing the social world, if what we study includes subjects that students are likely to come across because their context is social life. In that social world, the vocational is not to be ignored.

The transformation of courses which is being asked would require very little curricular retooling. Teachers would not have to be prepared differently from the most persuasive recommendations now being made. What these latter come down to is increasing the collegiate study of the subjects to be taught. That is, if the teaching of

English is thought important, then students' programs may need to show more study of English. What that enhancement might be, and who should share in its determination, must be left to other forums. Our present object is to say that we have no quarrel with increasing academic qualifications, assuming that this will be done thoughtfully. That is, someone who looks forward to teaching American or world history should learn that the historical record really is the history of a society and culture and is not to be compressed into a shard of the political and military record. To omit the history of religion, the history of science and technology, economic history, the history of art, and yet other significant aspects of human development, is to suffer intellectual tunnel vision. The burden is awesome. Our offer is of limited help, but is help for all that. The development of agriculture, trade, commerce, industry, organization of labor, and other traces of the vocational, technical, and professional can be exploited.

In which courses does the foregoing belong? Who will be responsible in the teaching staff? No one will be. In this instance, pairing a staff member from the vocational teaching corps with someone from the social studies is not as satisfactory a resolution as an ad hoc decision by those who have something to contribute to the historical illumination of the social environment. Perhaps such a group might be called an academic council. Schools should have such councils. When the social environment is their target, this council will find that there is a logical place for vocational membership. The communication of the council members will be of a professional type and, most important, will focus on a subject of mutual concern. These professional targets will do more than any exhortation that there should be respect for the vocational.

By focusing on understanding the social environment—past, present, and future—the utilization of skills of communication, of the three Rs at whatever level, of science, mathematics, and the humanities by technical studies and so on, vocational-technical staff will be teamed with those who work with the conventional academic studies.

The foregoing may seem to substitute "learning about something in the social environment" for what used to be called "meeting the adolescent's needs." We think that there is a real difference. For one thing, adolescent needs are part of an inclusive environment. For another, a staff group concentrates thought on learning materials, teaching strategies, and more. We hope that the gain made by true professional interdependence and communication will be fusion that submerges academic specialization,

a gain in *esprit de corps*, and a submergence of status for the end of reaching a mutually meaningful goal.

In the example offered, the starting point was an academic subject in the social studies. Nearly the same result can be had by taking as one's starting place understanding an issue in the social environment. Let us assume the vexing issue is one that would be natural to a vocational study of the family where both parents worked, or for consideration of the earnings of women as compared with men, or the matter of gender considered in the marketplace. In sum, the context is women in the social environment and the ideological commitment to equality of opportunity and treatment.[48] We wish to assert that this topic would be at home in that part of vocational preparation which should be thought of as contributing to a general education. Attaining specific skills still is a necessary component of a rounded program in vocational preparation, but, at the moment, attention is called to the intellectual potential in using vocational study to understand something of moment in the social environment. Such understanding is pivotal in appreciating the aim of general education.

The issue to be selected is not trivial and will be named again in the final essay of this three-part argument. In addition to the moral and constitutional questions that are involved, it is a fact that by the beginning of the 1980s women made up some forty-four percent of the paid workforce. By 1983, there were more than forty-four million women in the workforce, a number that represented fifty-three percent of all women and about forty-three percent of the labor force. Incidentally, sixty percent of mothers with school-age children worked (Bureau of Labor Statistics, 1984, p. 6; Office of the Secretary, Women's Bureau, 1983, p. 3). In explanation, the Office of the Secretary, Women's Bureau, has it that "During the past quarter century change in social attitudes, life styles, marital and family patterns, and employment experiences, have contributed to the sharp increase in the labor force participation rates for women" (p. 19). Nor is it likely that this rate will slow. In employment projections for 1995, a middle rate of growth projection proposes that "The labor force is expected to grow 1.6 percent per year over the 1983-90 period, slowing to

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[48] When thinking of equality and inequality in the social environment, the situation in vocational education can be lost from sight. Limiting statistical generalization simply to students in vocational programs we read that, "Minority students make up 24% of the total enrollment in vocational education—about 4% more than we would predict from their proportion in the general population. . . . Among all students in vocational education programs, 51.6% are female and 48.4% are male" (Bottoms & Copa, 1983, p. 349).

1.0 percent during 1990-1995. . . . Nearly two-thirds of the growth will be among women" (Snyder, 1981, p. 32).

Because a considerable proportion of this work will be in the service sector, a student's general education asks that there be some understanding of what service means in a modern economy and what is involved. As an adequate general education must make room for the meaning and roles played by women, so it must take cognizance of sectorial economics. The two are intertwined. As stated by the Bureau of the Census (1984), "Data from the 1982 Census of Service Industries show that the United States' 1,261,698 service industries, establishments or firms with payrolls that were subject to Federal income tax had receipts totaling $427 billion, an increase of 89 percent from $226 billion in 1977" (p. 2). The fact that employees in the service enterprises often are poorly paid and low in status makes all the more poignant evidence from 1979 figures of the U.S. Department of Labor that women earned 0.59 cents for every dollar paid to men.

How many history classes introduce students to this country's economic history, a part of which is the organization of labor, a history that has a place for sweatshops and the origin of the Ladies Garment Workers Union? We have touched on only a few of the subjects that teachers of vocational education should know about and be prepared to share with other teachers. In this instance our attention has been given to teachers of social studies, teachers who have a mutual obligation to provide students with a general education of a kind that has something to offer citizenship. Above all, there is the impact of that prime American principle, equality. In all its forms (e.g., equality of opportunity and equality of status) we confront an ideology that should guide American education and our social environment just as surely as the Marxist-Leninist ideology serves polytechnical education and the Soviet, as well as the social environment of other socialist countries.

There are so many examples of potential contributions of vocational preparation to a reborn general education, one whose academic and vocational constituents become more and more difficult to keep apart. While it seems true enough that here is a theme which merits addition—and we will add examples—we fear that seeming to be so dedicated to recasting policy on creating a viable general education for the high school leads us to be seen as overlooking the development of skills helpful to young people who want and need jobs. That simply is not so. Vocational preparation can go hand-in-hand with exercising young people in literacy, in being able to communicate, and, in general, in showing

themselves as well-tutored, flexible, imaginative people able to cooperate. Vocational preparation is a commendable effort that does not lose any of its luster when the subject is the reformulation of general education and when the social environment and social issues occupy the agenda. We simply have to juggle several balls at the same time. That is what those working with polytechnical education are attempting to do. Can we do as well? To do as well the issue of equality of esteem has to be dealt with and we have tried to be straightforward in declaring vocational preparation deserving of equal status with academic study. Nor have we shrunk from saying that where honing specific skills are helpful in finding employment for those who wish to move into the marketplace, either directly from high school or at some other time in their lives, such training should be available in school or on a cooperative basis.

The many allusions we have made to the marketplace make the economic interpretation of the social environment quite natural. But no group of studies matches the opportunity vocational preparation has for showing what is just as arresting and important. The opportunity is trenchant when thinking of general education. There is no mystery here. Our thought is on the polarity that has victimized affording equal value to so-called "pure" as distinguished from "applied" art. The former is as high on the totem pole of status as the amateur in sports; art applied to industrial design, interior decoration, and so much else, is professional and thought by some to be of lesser merit. As with so many distinctions, this one is insidious. The literature of such vocational fields as home economics or design is rich in examples that undermine this meretricious show of a false logic.

GENERAL EDUCATION AGAIN

At this juncture, the spotlight is on general education. Those charged with articulating and overseeing polytechnical education have not addressed the recasting of general education. They do not even talk or write about general education. We, on the other hand, think general education is singularly important, albeit in need of being remade. The new model, the new paradigm, should involve the cooperation and the communication of an academic planning entity we have called an academic council. As an added recommendation, the council's work holds promise for enhanced status of vocational education just because the totality of the vocational specialties and specialists can have so much to offer the planning. They can if the programs of vocational preparation are themselves remade so as to include more that contributes to understanding the many social issues illustrated here. It is the educated citizen that is our end and aim. We agree with Seckendorf (1981) that "An educated work force must function not only within the specifics of a job, but must also be able to move easily from one level of work responsibility to another, to adapt to increasing knowledge requirements of the work place and to function well as citizen and member of the community" (p. 227).

On the other hand, we share Snyder's (1981) fear that "If the majority of the citizenry cannot comprehend the factors at stake in such policy issues as energy, genetic engineering, ecology, public health and the uses of technology, decisions of such matters increasingly will be determined by an educated elite" (p. 147). This "educated elite" will be at home in a meritocracy rather than a democracy. *Prima facie*, perhaps, the ascendancy of meritocracy over democracy seems to pose no threat. A second glance at the law and policy of the meritorious, rather than the sovereignty of the generality of people, is a choice we do not elect. Thus, in education, it is not the schooling of those who will go to college that commands our exclusive allegiance. The general education for which we stand is to be truly general in its clientele. (The argument on behalf of a vocational preparatory program that attracts the female as well as the male, minority groups, and older workers is made forcefully and in detail by Bottoms and Copa [1983].) For that to hold true, we think that the convention in general education must be replaced by a redoing of both the usual academic form of general education and the customary vocational course concentrating on preparation for entering the workday world and the marketplace. To that end we have advised forming educational councils within schools and, perhaps, in that educational bureaucracy of the public schools that reaches beyond the individual school. And to the

same end our examples have been drawn from the economy, although the arena might have been political or some other slice of the social environment. Changes in the economy are well known and many times are readily explained by the impact of science through technology. It is not so very difficult to discuss and understand the application of the computer to the classroom, to agricultural marketing, to factory production—or to information processing wherever found. At a time when electronics touch so much, it is commonplace to write of automated offices (Moriarty & Yeager, 1982, pp. 46-48). Some seventy percent of companies in the United States now use word processing equipment, a figure that does not take into account copiers, calculators, enhanced telephones, or electronic mail terminals (p. 46). And personal computers are but the thin end of the wedge. Late in the nineteenth century, the British Parliament debated whether to close the Royal Patent Office on the assumption that all significant inventions probably had been made (Butler, 1982, p. 65).

Political strategies, issues—including global ones—would have provided as rich a harvest. Tariffs, international indebtedness, currency exchange, and so much else, link the economic and political. The web of general education is seamless and its patterns grow in complexity. But the complexity needs no excuse; it is the character of issues in the real world. Students, whether classified as college-bound or more immediately vocational in intent, share the challenges that come with these issues. Each will be a citizen and responsible for voting responsibly. The information and understanding each requires transcends the ordinary general education, transcends it so far that a transformation of what in the past has satisfied students of general education, at the high school or the collegiate level, is overdue.

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